GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF EDUCATION

Programme for Primary Schools

BELFAST
HER MAJESTY'S STATIONERY OFFICE
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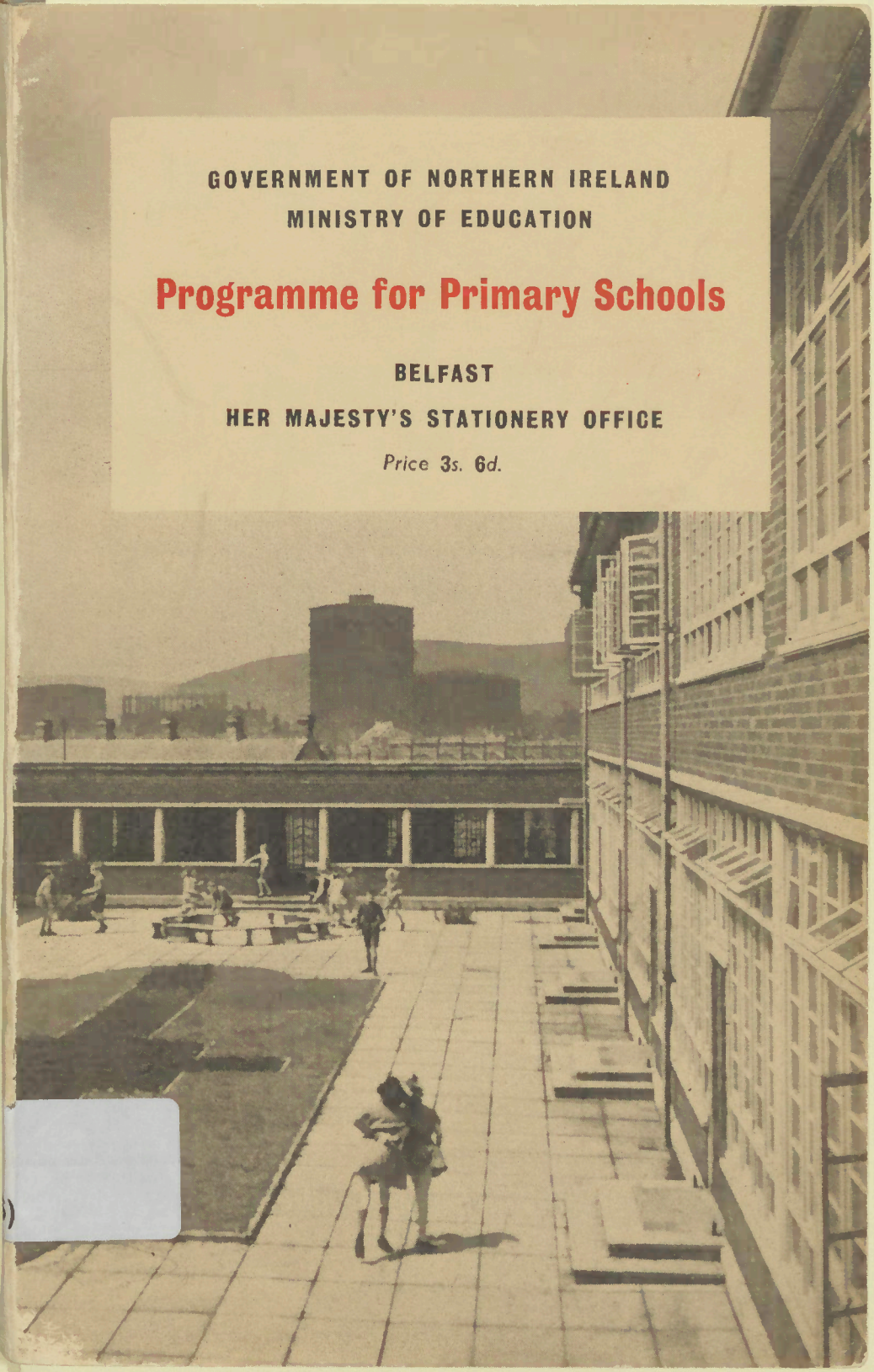

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1956

CONTENTS

For reasons of convenience, the pronouns 'she', 'her' have been used of the teacher. In the Appendix, however, the pronouns 'he', 'him' are used, except in the chapter on Domestic Science.

The cover picture of the quadrangle of a Primary School in Belfast is from a British Council photograph.

Chapter I

THE NEW PROGRAMME

THIS Programme for Primary Schools differs in form and intention from the 1932 Programme of Instruction for Public Elementary Schools which it supersedes. It is less rigid in its requirements; it lays less stress on the subject matter of syllabuses and more on method of treatment and approach; it concerns itself less with year by year class assignments of work and more with the individual child's all-round development.

The changes the Programme effects in the curriculum of the primary school are the outcome of developments which have taken place in educational thought and practice since the 1932 Programme was devised. That Programme reflected in large measure the conception of elementary education embodied in the Education Act of 1923; namely, 'an education, both literary and moral, based upon instruction in the reading and writing of the English language and in arithmetic'. The Education Act of 1947, on the other hand, seeks to provide for all pupils 'such variety of instruction and training as may be desirable in view of their different ages, abilities and aptitudes'.

These divergent definitions reveal a shift of emphasis from the content of the teaching to the child who is to be trained and taught, from a 'curriculum-centred' view of education to a 'child-centred' one. They indicate a growing realisation that the curriculum must follow the child's natural line of development and that children develop at different rates and in different ways and degrees. The present Programme is intended to provide a systematic but flexible curriculum based upon the natural interests and developing powers of childhood, by means of which the individual child's potentialities may be realised.

Other developments in educational thought and practice have also contributed to determining the nature of this Programme. Recent years have seen a widening of the scope of education, a fuller recognition that all aspects of the child's personality – physical, intellectual, emotional, imaginative, social, moral, spiritual – are involved in the educational process. The Programme seeks to provide for the development of sides of the child's personality which have in the past often been neglected in a training too predominantly intellectual.

Again, the Programme is designed to take fuller account of the doctrine enunciated in the Hadow Report on the Primary School that 'the curriculum is to be thought of in terms of activity and experience rather than of knowledge to be acquired and facts to be stored'. Underlying this principle is the conviction that pupils must be thought of not as passive recipients of the teacher's instruction but rather as the builders of their own education, developing by controlled and purposeful activity whatever abilities they may possess, and that it is the teacher's duty not just to impart knowledge but rather to create situations in which the children will draw on and learn from their own experience. The Programme is intended to set a high value on useful knowledge and at the same time to suggest methods by means of which this knowledge may be related to activity and experience and so may acquire reality and meaning for the children.

These are the main principles which underlie the new Programme, and they require that it should be more flexible than the one it replaces. It is intended that there should be such latitude within it as will enable teachers to meet the needs of children of widely varying mental abilities and rates of progress, will permit them to adapt their pupils' studies to differing types of environment and experience, and will encourage them to employ at all times imagination and enterprise in their methods and approach. Hence, no attempt is made to specify the exact amount of ground all the children in a class should be expected to cover in a subject each year, but rather a path is pointed along which each child may travel at his own best speed; and lack of definite prescription allows the teacher freedom to select material and method to suit her individual circumstances and the everchanging needs and interests of her pupils.

It must be appreciated however that this flexibility in the Programme, the freedom it confers and the methods it advocates impose upon teachers responsibility for the detailed planning of their work and constant reconsideration of their modes of approach. It is the duty of every teacher to construct each year a scheme of work which, while complying with the general directions and spirit of the Programme, takes account of the nature of her class, the type of school and its environment, and any special conditions of work. It is the duty of the Principal Teacher to advise assistant teachers on the content and arrangement of such schemes, to indicate, after consultation with them, policies to be pursued, and to see that schemes are correlated one with another throughout the school and ensure steady progress from class to class. Each teacher should, moreover, draw up in advance a weekly plan of work, supplemented where

desirable by teaching notes.

These schemes and plans of work will set a pattern to the teacher's efforts, but still more important are the day to day devising of suitable occupations for the pupils, the contriving of situations in which they will be eager to learn, the taking advantage of whatever suitable material their changing interests, the school surroundings and topical events may afford, the constant adaptation of methods to the needs of a particular time. Nor should the teacher confine her efforts entirely to the classroom: activities engaged in elsewhere, if properly supervised, can often make learning a living reality. These requirements demand of the teacher continual vigilance and thought, intimate understanding and study of the pupils, freshness of approach and willingness to experiment, in addition to thoroughness, without which her teaching, however enterprising, will achieve little lasting result.

In the chapters which follow, the work of the school is considered in terms of the usual school subjects. To a large extent this arrangement is a matter of convenience: the subjects have been sanctified by tradition, their names and content are familiar to teachers and their use as signposts will facilitate the extraction from the Programme of information on particular branches of school activity.

But while this arrangement in subjects has been found useful in compiling the Programme and will, no doubt, continue to be the framework on which school time-tables will be constructed, it is important that teachers should realise the changes in attitude that have taken place with regard to teaching by subjects in recent years. Its former prevalence was due to the traditional view that the chief function of the school was to impart knowledge to the pupils. The usual curriculum subjects included all those branches of knowledge with which, it was thought, the pupil should be acquainted, and the teaching of them provided some guarantee that at the end of the child's school career his stock of knowledge would be reasonably comprehensive and well-balanced. In so far as the imparting of knowledge continues to be a legitimate function of the primary school the use of the traditional subject divisions of the curriculum is a positive advantage.

Teachers, however, do not now look on themselves only as purveyors of knowledge: their function is to educate in the fullest sense the children entrusted to their charge. The question that the teacher should ask herself is no longer, How can I best go about the task of seeing that my pupils acquire such and such an amount of knowledge in a given time? but rather, What are my pupils capable of intellectually, artistically, spiritually, socially, and in qualities of person-

ality, and how can I organise my work so that their powers may develop to the full within the limits set by civilised societies? The instructional side of the teacher's work has by no means disappeared but finds its place as one aspect of the broader task of education.

With this wider aim before them teachers must regard the separate subjects of the curriculum in a changed light. They indicate in a broad way the various media through which teachers may approach their task; but as the focus of attention centres more and more on the child they cease to be entirely ends in themselves, and increasingly take on the character of tools to be used as best serves the end in view. They tend to some extent to lose their separate identity, to overlap and, at times, to merge completely.

Thus, for example, if teaching the pupils to read with understanding and to express their ideas intelligibly in words is of paramount importance, it should be undertaken willingly by all teachers where opportunity offers, be the time-table subject what it may. Nor should the practice of allowing pupils to do some of their reading for comprehension in the English period from books with a historical or geographical content seriously worry the teacher of English. No artificial barrier need be erected to separate Art from Handicrafts, History from Geography, Science from Mathematics. When a lesson in one subject can be made more effective by employing information, skills and techniques usually thought of as belonging to another, no hesitation need be shown in doing so.

To carry out their work successfully teachers must consider both the subject matter of their lessons and the manner of presentation. The subject matter must be of value to the pupils as a segment of knowledge or as an element in their training in essential skills; it must be within their comprehension at their particular stage of mental development. Only topics that qualify for admission under both heads should be included in the syllabus. It may well be that some of the traditional content of teachers' schemes of work will have to be discarded if these standards are applied, and that other topics, hitherto neglected, will have their claims for admission strengthened. If this be so, it should not cause any uneasiness. The teacher's task is to select only the material she feels to be suitable, and then to present it in the way that is educationally most fruitful.

Guidance on teaching methods and the presentation of material will be found in the ensuing chapters. Here it may suffice to say that little progress will be made unless the teacher arouses the children's interest in the topic and, by providing opportunities for them to make an active contribution to the work of the class, ensures that their interest finds an outlet in effort. The whole process must give

them that sense of achievement and confidence in their own ability which will result in the continued application of all their energies to the tasks set before them.

Further, when it is recognised that children within the same class may vary greatly in ability and that each should have the opportunity of progressing at his own rate and is entitled to the attention he individually needs it becomes clear that class organisation must be very carefully considered. Instruction of the class as a unit has its place in subjects in which the appeal is corporate, aesthetic or emotional, such as music or poetry, and in those in which degrees of skill are not directly involved, such as geography and history. When applied to most other subjects class instruction may at times secure a reasonably uniform level of attainment throughout a class but, being of necessity aimed mainly at the pupils of average ability, it is likely to dishearten or impose undue strain on the weaker members and to withhold from the abler the opportunity of exercising their talents to the full. Moreover, it gives limited scope to independent effort and self-education. While therefore class instruction can at times be employed to advantage it should frequently give place to group and individual teaching.

The division of classes into groups has long been recognised as an indispensable arrangement in small schools in which pupils of several standards are included in the same class; it is a method of class organisation which can to good purpose be adopted generally. Even in the largest schools classes are seldom so homogeneous that all the pupils show the same ability and develop at the same rate: for such branches of the work as reading, written expression and arithmetic division into groups is generally advisable. The number and size of the groups will be determined by the special circumstances of the class and it is not possible to prescribe an arrangement universally applicable. It will, however, often be found desirable to divide a class into three groups comprising respectively the weaker, the average and the abler pupils; the groups will not necessarily be of the same size and the pupils composing them may vary from subject to subject and from time to time. The group or groups not under immediate instruction should be given assignments of work which they can attempt on their own account and have with thoughtful effort a reasonable chance of covering. The teacher must find time for checking the work and giving individual or group assistance where it is found to be necessary. In this way it is possible for her to focus her efforts where at any time they are most needed; it is possible too with the weaker pupils to concentrate on essentials, while the abler range more widely and break more ground.

The group methods thus outlined call for qualities in a teacher not required in the same degree in class instruction. She must train her pupils to work steadily on their own account; she must exercise judgment in distributing her time among the various groups of the class and in devising appropriate assignments of work for them; she must plan and prepare her work carefully so that no time is lost in attempting at the last minute to find work for the various groups to do; she must know, finally, when class instruction and when group or individual teaching is most likely to succeed and be able to adapt her organisation accordingly. What, indeed, she should aim at is a judicious blending of class, group and individual teaching which will ensure that every child, while profiting from corporate activities of the class as a whole, has yet, in studies in which children progress at different rates, inducement and opportunity to proceed at his own best speed.

RELIGIOUS AND MORAL EDUCATION

No syllabus in Religious Instruction is or can be prescribed in this official Programme. That this is so must not obscure the paramount necessity of establishing the children's education on a firm spiritual basis. This necessity is recognised in the 1947 Education Act, under which the school day in every primary school is to begin with collective worship on the part of all the pupils present (apart from those excused at the request of their parents), a single corporate act of worship being obligatory except where the nature of the premises makes this impracticable. The Act further requires religious instruction to be given in every primary school, though individual pupils may be excused at the request of their parents; and by Statutory Rules and Orders the period which is to be set apart for such instruction is defined as at least one half-hour each school day or its equivalent within each week.

The character of the collective worship and of the religious instruction given is, in voluntary primary schools, under the control of the manager. In county schools the collective worship is not to be distinctive of any particular religious denomination and the compulsory religious instruction is also required to be undenominational; ministers of religion and other persons (including teachers of the school) to whom the parents do not object are, however, allowed reasonable access at convenient times to impart religious instruction which may be distinctive of a particular religious denomination. It is the duty of every teacher in a county school to attend collective worship in the school and to give undenominational religious instruction if so required by the local education authority, unless he

takes the steps specified in the Act to obtain exemption on grounds of religious belief. It is confidently believed that teachers will continue to carry out their essential duty and exercise their high privilege of promoting their pupils' spiritual welfare by active and sincere participation in the religious life of the schools they serve.

Again, no attempt is made in the Programme to lay down a definite scheme of moral instruction occupying a specified part of the school day. It is, however, of the utmost importance that, as was stated in the 1932 Programme, 'all children should be well grounded during their school career in the moral principles upon which the formation of character and the proper training for the responsibilities of life depend'. 'No school', that Programme asserted, 'can be held to be discharging its function satisfactorily unless in its ordinary management all reasonable care is taken to bring up the children in habits of punctuality, cleanliness, and neatness, and in the practice of good manners and language, and also to impress upon the children the importance of cheerful obedience to duty, of consideration and respect for others, and of honour and truthfulness in word and act'.

The day to day life of the classroom and the school provides endless opportunities for incidental training in such qualities as co-operativeness and self-control, orderliness and courtesy, kindness and fair play, truthfulness and honesty, diligence and care. Many lessons, reading and history lessons in particular, furnish material for the simple study of the principles of conduct, of right and wrong. The neatness and attractiveness of the classroom and of the school and its grounds may be a source of pride and pleasure to the children and insensibly affect their habits and outlook. But the most potent force of all is the influence and example of the teacher herself. If she sets herself and her pupils a high standard of industry and attention to detail, if she conducts the affairs of the classroom with fairness and good humour, courtesy and self-control, if she bears constantly in mind that the moral training of the children is no less important than the intellectual and lets pass no opportunity of promoting sound habits, then she will exert a very real influence for good on their characters and conduct. A great responsibility lies upon the teacher in this respect.

CITIZENSHIP

In the primary school the child receives an important part of his early training in citizenship. As a member of the school community he learns to discipline himself to the life of a wider circle than that of the family, to respect the rights and property of others, and to

observe rules made for the common good. During his primary school career he should begin, in addition, to appreciate some of his future duties as a citizen; the school should in a simple way foster a sense of civic duty to be exercised outside as well as within the school bounds. Thus, not only should children be required to take care of the books and apparatus provided for them and of all school property: they should learn to regard in the same light all public property, whether it be books from the library, trees in the park, or traffic signs on the road. Not only should they be trained to keep tidy the classroom, the school building and its grounds; they must understand also that they should not scatter litter about the countryside and streets. The good manners, respect for their elders and consideration for others which they are trained to show in school they should learn to exercise also in their out-of-school life, in bus and train, in queue and public place. They should be brought to realise that they enjoy great benefits at the hands of the community and that this entails on their part certain duties and responsibilities which they must loyally undertake. In the primary school the process must begin which will produce good citizens in the years ahead.

There are certain aspects of good citizenship to which the attention of the children should particularly be drawn. Among them are thrift, temperance, kindness to animals, and regard for road safety.

Practical training in thrift is provided in many schools by the organisation of School Savings Groups. It is hoped that teachers will continue to co-operate zealously in this work which is essential alike to their pupils' general training and to national well-being.

Schools have in the past done much to advance the cause of temperance. Teachers should continue to point out the moral and social evils to which intemperance gives rise.

Training in the humane treatment of animals is necessary not only for the sake of the animals themselves but also as a means of inculcating a hatred of cruelty of every kind and a sense of compassion for the suffering and defenceless. It should be brought to children's notice, also, that many birds are protected by law and that serious penalties may be imposed for killing them and for destroying or robbing their nests.

The alarming frequency of preventable road accidents in which children are involved makes it imperative that careful instruction should be given in school on the measures necessary to ensure safety on road and street. The children should be given frequent kerb drill; they should be warned repeatedly against such dangerous practices as playing with a ball on the footpath or in the road, playing round

stationary vehicles, and hanging on vehicles of any kind; as soon as may be they should be instructed in the Highway Code.

Finally, in the primary school some sense of world citizenship should be implanted. Right attitudes of mind should be created towards countries and peoples other than our own, and the seeds of international understanding, on which the peaceful course of world affairs so greatly depends, should be sown. Little direct teaching on this matter can be attempted at this stage, but no opportunity should be missed of building up a sympathetic interest in other peoples – their lives and work, their songs and games, their heroes and their contribution to the common heritage – thereby creating conditions in which a sense of membership of the world community may evolve.

HEALTH EDUCATION

It is also the function of a school to promote the physical well-being of its pupils. In a later section of the Programme will be found suggestions on the type of work which should be done during the periods allocated in the time-table to Physical Education. But the activities practised during these periods are only part, if a very important part, of the provision made for the pupils' physical education and welfare. There is need also to ensure that school and classroom business is at all times carried on in hygienic conditions and that the pupils are instructed in the elementary principles of healthy living.

Thus, careful attention should be paid to ventilation: windows and ventilators should be adjusted so that an adequate supply of fresh air is available without draughts. The wearing of outdoor clothing within the school building should be discouraged: the pupils should be persuaded to leave their overcoats, raincoats and scarves in the cloakroom and encouraged to change from rubber boots, when used, into shoes or slippers. Reasonable time in the course of the school day and after school meals should be allowed for recreation; whenever possible it should be spent by the children out-of-doors, playing games or not as they choose. Tables and chairs and desks should be suitable in size for the children using them. Sanitary arrangements should be maintained in a state of cleanliness. All these matters, and, indeed, many others, must receive constant attention if the work of the school is to be carried on with full regard to the pupils' health.

Nor is it enough that children should be provided with hygienic conditions in which to work: they must themselves play an active part in the pursuit and maintenance of health. They must be

trained to keep themselves and their clothing clean. They must learn to use their handkerchiefs, to regard hand-washing before meals and after the use of lavatories as a matter of routine, to assume good posture when sitting and good carriage when walking, to make regular and proper use of lavatories, to avoid dropping scraps of food, bottle tops, milk straws, sandwich papers and other litter around the school, to observe, indeed, all the elementary rules that make for healthy living.

With the younger children instruction in these matters will be largely practical and incidental, though insistent. With older pupils the teacher's precepts and the school environment must be supplemented by more systematic teaching, particularly in the senior classes of unreorganised schools. For these classes Health and Habits will form a subject of the curriculum. Much of the work comprised in it may with advantage be done in conjunction with related subjects – Domestic Science, Science and Physical Education, for example – and no specific allocation of time-table periods is recommended. Lessons will however be needed from time to time to revise, supplement and systematise the work; and since, under these arrangements, the subject may be the responsibility of more than one member of the school staff, it is especially important that teaching syllabuses in it should be carefully prepared at the beginning of each school year and that the Principal should satisfy himself that the work is being thoroughly done.

Finally, there should be close co-operation between teachers, on the one hand, and doctors and other officers of the Health Services, on the other, in all matters affecting the pupils' health and well-being, and particularly in efforts to secure the early diagnosis of physical, mental or emotional disabilities. Teachers have unrivalled opportunities for observing the day to day behaviour of the children in their charge and it will often fall to them to initiate the arrangements for remedial measures or for special educational treatment for those who suffer, for example, from impaired sight or hearing, speech defects, maladjustment, mental retardation or physical handicaps (including postural defects), or whose lowered vitality renders them for the time being unfit for the normal régime of the school.

ARRANGEMENT OF THE PROGRAMME

The Programme is divided into two main sections. The first deals with pupils aged approximately from 5 to 11 years in all primary schools, and the second, the appendix, with senior classes in unreorganised schools.

In both parts and in the suggested time allocations given later in this chapter the work of the school has been considered in terms of the traditional subjects of the curriculum; but there are some changes in nomenclature with which teachers should make themselves familiar.

Nomenclature of classes: The traditional names for the various classes – Junior Infants, Senior Infants, Standard I, etc. – do not appear in the Programme. The omission is deliberate. It is felt that the traditional nomenclature might be taken to imply that a break occurs in the child's education at a point when he ceases to be an 'Infant' and enters 'Standard I' and that a fundamental change of attitude and method on the part of the teacher is then necessary. This is far from being so: the child's primary education must be regarded as a single and continuous process and any change of attitude and method must be a gradual one. Moreover, the term 'Infant' is ambiguous, and the term 'Standard' a survival of the days when a pupil's progress through the school was based strictly on his performance in an annual examination; this is no longer the case. A more logical and, educationally speaking, less objectionable nomenclature has been introduced: the classes in the primary school are designated Primary 1 to 7 to correspond with the former Junior Infants to Standard V range, and the senior classes in unreorganised schools Primary 8 and 9.

Temperance and Hygiene: It is considered that the title Health and Habits more accurately reflects the widened scope of this subject. Reference has already been made to its treatment in the sections on Health Education and Citizenship.

Information and Observation Lessons: It is felt that the name Information and Observation Lessons no longer indicates accurately the content and purpose of the lessons in elementary geography, history, nature study and hygiene given to pupils in the lower classes of primary schools, and it has been discarded. Instead, it is intended that in Primary 3 as much of that material as is suitable for children of the age should be included in the work covered by Sections (*b*) and (*c*) in the schedule of time allocations given below for that class (see pages 16 and 17); and from Primary 4 onwards Geography, History and Nature Study are included in the curriculum under their own names.

Science: In the curriculum for the senior classes in unreorganised schools this term has been introduced to describe what was formerly taught in Elementary Science, Nature Study and Horticulture.

ALLOCATION OF TIME

No single allocation of time amongst the various subjects would be

applicable to all schools, and teachers are advised to vary the schemes suggested below to suit their particular circumstances. Two figures have been attached to most subjects. The lower one is the minimum weekly period that should be devoted to the subject in a normal school. The higher is the maximum weekly time which, in most schools, it will be possible to assign to a subject if the claims of other branches of the curriculum are to be satisfactorily met; in special circumstances, however, it may be exceeded.

No time allowance has been made for the optional subjects, History and Irish. Teachers should fit them into the curriculum as best suits the circumstances of their schools.

Suggested time allocations

Primary 1 – 3

A precise allocation of time to the various branches of the work and a minute sub-division of the daily time-table are alike undesirable at this stage. The greater emphasis now placed on active learning and independent effort on the part of the children demands a more elastic allocation of time and more fluid time-table arrangements than those traditionally imposed. Young children show wide divergences in rate of development and ability to work; they need time to experiment, to complete a task they have undertaken, and to develop powers of concentration: the curriculum and the time-table must be adjusted to their individual needs. Periods of oral instruction are necessary, but they should not be unduly prolonged and their timing should be so far as possible at the discretion of the teacher, who should see that they play their proper part in a balanced curriculum.

In general, the following weekly allocation of time is suggested for Primary 1, 2 and 3 :

(*a*) Physical Education, including play out of doors: $1\frac{1}{4} - 2\frac{1}{2}$ hours.

In view of the close relationship between physical well-being and mental development in young children a short period of free play out of doors and a short period of Physical Education daily are desirable.

(*b*) Free use of the resources of the classroom and the school environment, including activities in art, handwork and nature study: $3\frac{3}{4} - 5$ hours.

Blocks of time can be planned during which children can observe and gain knowledge from the classroom and the school garden and improve their manual dexterity and

æsthetic appreciation, and may of their own accord practise the basic skills of reading, writing and number work.

(*c*) Stories, poetry, dramatic work, music: 2½ hours.

Provision should be made for telling and reading stories of many different types and drawn from many different sources, for speaking verse and for simple mime and dramatic expression. When children are encouraged to speak spontaneously the 'conversation lesson' should be unnecessary. A daily period of some form of music is essential.

(*d*) The basic skills: reading, writing, number work: 5 – 8¾ hours.

Note: The apportionment of time to (*b*) and (*d*) above will vary with the age of the children. The younger children will need more time for (*b*) than the older, since the latter know the possibilities of material and can settle down to use it without delay. On the other hand, the older children need more time than the younger for (*d*). No exact distinction is possible: children in Primary 3 will often spend a period assigned to (*b*) practising of their own accord newly acquired skills in the basic subjects.

Primary 4 – 7

English and Handwriting	8 to 9 hours
Arithmetic	3½ to 4½ hours
Geography	1 to 1½ hours
Nature Study	1 to 1½ hours
Music	1 to 1½ hours
[1]Art, Handwork, Needlework	2½ to 3½ hours
Physical Education	1 to 2 hours

Optional Subjects:

History
Irish (in Primary 5 and upwards)

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[1]*Art, Handwork, Needlework:* The traditional arrangement in mixed schools has been for the boys to be taught Handwork while the girls are at Needlework. It is hoped that by increasing the time allowance by half an hour it has been made possible for the girls to spend some time at Handwork without curtailing the period devoted to Needlework.

Senior classes in unreorganised schools

English	8 to 10 hours
Mathematics	$3\frac{1}{2}$ to $4\frac{1}{2}$ hours
Geography	1 to $1\frac{1}{2}$ hours
[1]Science (boys and girls)	1 hour
Music	1 to $1\frac{1}{2}$ hours
Art	1 to 2 hours
Physical Education	1 to 2 hours
[2]Domestic Science (girls only)	2 to 3 hours
[3]Health and Habits	(No specific time allocation)

Optional Subjects:
History
Irish

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[1]*Science:* The time allowance has been restricted to an hour so that in mixed schools it may be taught to both boys and girls. Additional time may be devoted to it in boys' schools, and in mixed schools by the boys when the girls are at Domestic Science.

[2]*Domestic Science:* Alternative employment must be arranged in mixed schools for the boys when the girls are being taught Domestic Science. If the local technical school conducts classes in Woodwork for the boys concurrently with those in Domestic Science for the girls this arrangement should be adhered to. Otherwise provision will have to be made for the boys inside the school. Additional time may be devoted to Science (see Note 1), Health and Habits, Art and Crafts, and, possibly, Music or elementary Mathematics.

[3]*Health and Habits:* No specific time allocation has been made for this subject. For further information teachers should consult the section in this chapter headed Health Education.

Chapter II

ENGLISH

PRIMARY 1, 2 and 3

ENVIRONMENT: THE CLASSROOM

In the training of young children the fundamental aim is the promotion of the growth and development of the child's whole personality. To this end the classroom environment has a major contribution to make. It should provide facilities for the natural activities of childhood, such as constructive play with water, sand, clay, wood, plasticine, crayons, chalks and paints. A book corner, a nature table, attractive pictures, dolls, bricks, a toy house and shop, puzzles and beads will give the children endless opportunities for developing their imaginative experience; the school garden might also contribute. A daily period of play, when the children are allowed to pursue a self-chosen activity with a variety of materials, is invaluable for their general development. Such materials and opportunities should be available throughout Primary 1, 2 and 3, although the use made of them will change and develop as the children become more skilled and mature.

From these activities and experiences the child will derive much benefit. He will make social and personal adjustments, develop self-confidence, acquire valuable motor skills, broaden his experience and extend his first-hand knowledge. On the child's speech, too, this wealth of experience will have a profound effect. His control of the language will improve, for there will be both opportunity and stimulus to talk. He will hear others talking and through joining in spontaneous play will be constantly using and developing his own speech.

THE TEACHER

The role played by the teacher in the mental and linguistic development of the child is of supreme importance. She should naturally evince a lively and intelligent interest in young children as individuals, understand their basic needs and provide abundant opportunities for the development of their powers of expression in a cheerful and friendly atmosphere. It is impossible to overestimate the value of the intellectual companionship which the successful teacher can give to her pupils. She makes the utmost use of the children's pre-school experience and of the school environment. She enters into their

activities and shares their joy when they discover things for themselves. She is always ready to listen to and answer their questions and, by her own skilful questioning, seeks to foster thought and speech.

As it is desirable that every child should express his thoughts clearly and fluently, the teacher's voice should be natural, pleasant and well-modulated, serving as a model for the pupils, her vocabulary rich and precise, and her own powers of expression sensitive and well-trained.

ORAL ENGLISH: STORY, DRAMA AND POETRY

In an environment rich and varied like that described, speech will arise easily and spontaneously. To strengthen the child's command of language, to widen his vocabulary and generally to shape his speech will be the teacher's main consideration. It will be her responsibility to answer his questions and direct his discussions; in story-telling, dramatic activities and poetry, she will find other valuable aids.

Speech-training, in the technical sense of the term, should be incidental at this stage, and formal exercises should be deferred until later.

Story-telling

A well chosen story will often serve several ends. It will give enjoyment to the child; it will stimulate his imaginative growth, widen his experience, broaden his sympathies and extend his vocabulary. It will also enable the very young children to hear their thoughts and experiences expressed in words.

Care must be exercised to select stories suitable to the different stages of a child's development. In the early stages, stories should be related in the main to the children's own experience and background. At this stage, or somewhat later, children display an enthusiasm for animal and traditional stories and for tales of the accumulative type with much repetition. The stories in Primary 1 and 2 should normally be short, and have a simple plot and few incidents. Fairy tales and longer stories, especially those with an element of fear, are best deferred to Primary 3. The teacher's work can often be profitably supplemented by judicious use of appropriate B.B.C. broadcasts to young children.

Normally the teacher will tell stories to the class in her own words and for this she should endeavour to acquire a vivid and dramatic style. Some stories, particularly those by the great masters, will be more effective if read to the children.

Dramatic Activity

In dramatic activity opportunities for the encouragement and development of oral expression abound. For children, this activity has its beginnings in simple, unrehearsed play—keeping or furnishing the play-house, buying and selling at the play shop. At this stage it arises spontaneously, shaped by the child himself in endless, unselfconscious imitation of the activities of human life. In the judicious widening of the range and scope of these spontaneous attempts, by supplying abundant material from life and literature, the teacher shows her skill. She may begin by suggesting the miming of other everyday actions or situations. From this there is a further development in the miming or acting of nursery rhymes and tales. Throughout, the teacher will have as her main endeavour the preservation of the initial spontaneity. The children will be encouraged to invent stories and dialogues and interpret them in natural actions and movements.

The use of a dressing-up box is recommended at all stages. Such properties as are used should be of the simplest kind and made by the children whenever possible.

Poetry

In selecting poetry for young children, the teacher will find much suitable material in the traditional jingles and nursery rhymes. Finger plays, though not now so well known as formerly, have also their value. Poems in which the style is direct, the language suitable and the sentiment healthy and appropriate will be found valuable, while those with a well-marked rhythm make a distinct appeal to young children.

Some poems will be learned by heart by the pupils and spoken either in chorus or individually. Actions may be used if they arise naturally and spontaneously from the poem but should not be dictated by the teacher. At all times a clear, natural tone will be encouraged. Many poems will be read to the children; the poems read should be much more numerous than can possibly be committed to memory.

READING

Reading is an indispensable skill of modern life. In addition it provides the child with a means of pleasure and helps to widen his knowledge, vocabulary and experience.

Methods in General

It is convenient to speak of stages in the teaching of reading. It must, however, be understood that these stages are not sharply

defined but merge into one another, that methods appropriate to one stage should often be continued in a later stage, and that, as children develop at different speeds, all methods may be in use in one group concurrently. For example, it is strongly recommended that beginners should first acquire a reading vocabulary by 'sentence' and 'look and say' methods and proceed later to phonic training. 'Look and say' practice should not, however, be abruptly discontinued, but should proceed side by side with phonic work. It will also be necessary to vary the method to meet the needs of individual children if it is found that they do not respond to the method normally employed.

Preparatory Stage

To attempt to teach a child to read before he is ready is fraught with considerable danger. There is a real risk that the process of learning to read will prove laborious, that interest in reading will be lost and that antagonisms will be set up. Great importance is therefore attached to the pre-reading stage.

In it the teacher has several very important things to do. It is essential that children learn to express themselves in speech and, since speech arises out of play activity, they must be given opportunity for play. It is equally essential that they should acquire a desire to read and an interest in the skill. There are also other more immediate aims of no less importance. The children must be given opportunities of seeing and recognising in print what they know from experience and they must become acquainted with the left-to-right eye-movement.

To accomplish these ends the teacher will use a variety of methods. Through play activity, as mentioned above, children create opportunities for speech. Through hearing stories read to them, and through looking at picture books with suitable captions they can acquire the desire to read. To help in the fundamentally important task of establishing a relationship between words and things the teacher will make use of a variety of devices. As most children are interested in the written appearance of their own names and readily acquire an interest in the names of their classmates, the teacher could begin by giving out name tags. Classroom labels, pictures with sentences, a wall story and the daily news all prove helpful in this connexion if they incorporate the children's vocabulary. For revision and consolidation of this knowledge, flash cards and blackboard work are of great importance. As this work proceeds, the child himself suggests and may make his first reading material —a picture book with simple captions or sentences.

Recognition of Reading Readiness

At what point should direct teaching of reading from a book begin? Only the teacher with her experience and knowledge of the children can answer this question. But, in general terms, the following are among the indications of reading readiness: a speaking vocabulary adequate to clothe the child's experience in words; a competence in visual and auditory discrimination, in particular the ability to recognise colour and differentiate shapes; and familiarity with the left-to-right eye-movement. There must in addition be sufficient interest in reading on the part of the pupil to ensure steady effort, a certain degree of emotional stability and adequate intellectual development.

Choice of Reader

Having decided that reading from books can now advantageously begin, the teacher will have to consider the selection of a reading series. In choosing a series the following considerations should be borne in mind. The book should be based upon the interests and activities of the children. Its general appearance should be attractive, print should be of suitable size and spacing, the phrasing should be good, the vocabulary should be controlled and there should be adequate and purposeful repetition. The illustrations should be closely related to the text and not merely irrelevant pictures.

Stages in Reading

Apart from the preparatory stage already discussed three stages may be distinguished in the development of reading ability in this department of the school; they are outlined below. They do not necessarily correspond with the three classes, Primary 1, 2 and 3: a Primary 2 class, for example, may contain individual children at each of the three stages.

Stage I: At this stage the immediate aims are to help the children to build up a vocabulary of words learned by sight and to ensure that they can recognise them in any context.

The news sheet will be continued. The characters and many of the words and phrases of the first graded Reader will be introduced through pictures and this knowledge will be tested and revised by the use of flash cards and the blackboard. In this way the children become acquainted with much of the material of their first Reader before ever the book is put into their hands. When this happens they are then in a position to tackle their reader with a confidence that goes far to ensure success.

In dealing with fresh reading matter contained in the book the teacher could begin with an examination by the children of the illustrations accompanying the text, with the aim of discovering what is said in it. Then could follow the recognition by the children of familiar words in the text. New words would be taught by the teacher. Silent reading of the text could come now, followed by a few general questions on the substance of the passage. Then the passage will be read by individual children orally, and, finally, exercises involving drawing, writing and the matching of words may be carried out by the children. Subsequently, revision of the passage would be necessary.

Stage II: Here the immediate aim is to furnish the children with a tool for recognising new words.

In Stage I the children have acquired a basic 'sight' vocabulary of approximately one hundred words which can be recognised in any context. Phonic training should now begin with a view to enabling the children to tackle for themselves an increasing number of words. For a beginning it will suffice if the children acquire, through simple analysis of easy words, some knowledge of the names and sound values of letters, the mastery of this knowledge being left to the next and subsequent stages. To exercise this newly acquired skill practice is essential. For this purpose independent and silent reading from easy supplementary readers is indispensable.

Although the immediate aim here is as stated above, the methods used in Stage I ('look and say' and intelligent guessing) will be continued. The pupil will continue to use the graded reader and will also have access to supplementary readers. To help him in reading he makes use both of phonic knowledge and of word recognition.

Stage III: Here the aim is to establish and consolidate the skills, with a view to encouraging rapidity and confidence in reading.

There will be steady work through the graded series and the phonic work and analysis of words begun in Stage II will be continued.

Much silent reading should be possible at this stage. The children should be encouraged to make free use of the book corner or class library.

WRITING

It is customary to use the term 'writing' in a very wide sense. It is necessary to distinguish between handwriting, which is a manipulative skill, and communicative and creative writing, which are forms of self-expression.

Self-expression in Writing

With most children, the pictorial presentation of ideas is a form of self-expression evinced at an early age. In drawing and painting they readily find a means of expressing their ideas and experience, for however crude in execution and unintelligible their drawings may appear to an adult, to them they are often real and meaningful. It is not surprising, therefore, to find that where the teaching of written expression arises out of the child's picture-making he usually approaches his task with enthusiasm and interest.

As a beginning children should be encouraged to draw pictures of incidents, stories and events. Sometimes they will decide for themselves what to draw; on other occasions the teacher may suggest a suitable topic. In the occurrences of everyday life – an incident on the way to school, experiences in the classroom, seasonal operations on the farm, events in the home and family – can be found inexhaustible material for drawings and pictures. The stories and nursery rhymes heard in the classroom also lend themselves admirably to pictorial presentation. Other variations of this type of exercise readily suggest themselves to the thoughtful teacher.

In deciding what assistance to give the children in their drawings, the teacher will be guided by her skill and knowledge of the child: she may ask questions about the incident represented – the place and its appearance, the people concerned and their activities – always with the aim of encouraging the pupil to give as adequate a pictorial representation as possible. Most children are very willing to talk about their pictures and should be fully encouraged to do so, putting into spoken words the experience they have attempted to draw. Somewhat later the desire arises to express the thought in writing. A word, phrase or sentence, dictated by the child, can be printed by the teacher alongside the picture. This the pupil can trace or copy.

At first many of the children will write very little. But as their reading vocabulary grows and they become more articulate, the amount of writing increases. To promote competence in writing and to maintain and develop freshness and variety in expression are now the teacher's main concern. Many demands will be made upon her skill and enthusiasm and at all times she should show understanding of the pupil's absorption in his own experience. It is essential, too, that the children should enjoy a rich variety of pleasant and stimulating experiences, in school and out; here the resources and opportunities of a well-equipped classroom prove invaluable. The teacher may cut pictures from a magazine or newspaper and encourage the children to build a story around the people or incident depicted. The corporate life of the class, with activities in which all participate,

also has its contribution to make. To assist the children in finding the words they need there should be available picture dictionaries, wall charts, labels, etc.; the blackboard should also be used. Books recording new words as they are acquired should be compiled by the children at a later stage, possibly in Primary 2 and 3.

Since the main purpose of these exercises is the encouragement of the child's powers of self-expression, he should be freed so far as possible from unnecessary restrictions. The tools he uses should be the best suited to his stage of development. For drawing, coloured crayons are considered more suitable than chalks and for writing he should use thick pencils with soft lead. Exercise books with large, unlined pages have proved satisfactory. The treatment of spelling in Primary 1 and Primary 2 should be incidental rather than formal; the teacher should anticipate the child's needs and ensure, so far as possible, that he does not mis-spell. Guidance in the use of capital letters and full stops should be on similar lines.

Writing as an aid to Reading

Other kinds of writing exercises, designed primarily to facilitate progress in reading by giving practice in the recognition and recall of words, are also valuable. If carefully chosen and suitably graded they may be practised at most stages. For a beginning, children may be asked to represent pictorially the class news of the day or part of a wall story and then copy or write from memory the caption which accompanies it. Or again they may be asked to write words they have matched with pictures. Another useful exercise is the writing of a sentence they have built up from single words. At a later stage they may be able to write several sentences about some character or incident in their reading book. These exercises, and others of a similar nature, being based upon the reading material, should be taken as far as possible in close conjunction with the reading lesson. A separate writing book might be used for the purpose.

Training in Handwriting

Training in handwriting should proceed concurrently with practice in creative writing. Since writing as a skill involves muscular co-ordination of eye and hand, it is essential that children be given opportunities of using paint brushes, crayons, pastels, pencils and chalks and scissors. The use of such materials and tools helps in promoting manual skill and control. Pencils should be used in all writing lessons throughout Primary 1, 2 and 3.

Direct instruction in handwriting should be given when the children are able to set down on paper the words they know. In view

of the association of writing with reading, it is advisable at the beginning to use a print script. Guidance should be given in the correct formation of letters, their relative sizes, spacing, and the use of full stops and capitals. The children might be asked to copy their names and short phrases from the blackboard. Later they might be asked to copy items from the news sheet and simple rhymes and jingles. At all stages the writing should be meaningful and, except for remedial purposes, should not consist of individual letters or words. The use of unlined books is recommended in the early stages of writing. In Primary 2 books with single lines might be introduced. The change from print-script to the style of handwriting adopted in the school should be made when the print-script is no longer so essential as an aid to reading. This would normally not take place before Primary 4.

Spelling

As previously stated, the teaching of spelling in Primary 1 and Primary 2 should be incidental. In these classes the children will, through their writing and their reading, learn to spell a great number of the words they meet. In Primary 2 the order of the alphabet should be established and a beginning should be made with phonic training. In Primary 3 this training will continue and will develop, and a systematic approach to training in spelling should then be made. The use of graded word lists is recommended. It is not considered advisable to expect children to spell all the words in their reading books. As it is more important that they should be able to write words correctly than to spell them aloud written spelling exercises should predominate.

ACHIEVEMENTS TO BE EXPECTED AT THIS STAGE

What progress in language can a child be expected to make in this department of the school? Obviously this will be determined by his innate ability, the nature of the home and school environment and the quality of the teaching. An average child, however, may be expected to have acquired the following accomplishments. In speech, he will have learned to express himself with reasonable ease and intelligibility and will have had experience in drama and verse. In reading he will have developed a liking for books, have had practice in silent reading and acquired a vocabulary suitable to his stage of development. In writing the pupil will have had opportunities for self-expression and for performing exercises designed to assist his comprehension of reading material. He will have learned to spell a number of words, some by sight and others by means of word

analysis and word building. In addition he will have learned to write legibly in print-script.

PRIMARY 4 to 7

THE UNITY OF ENGLISH TEACHING

It is convenient and will probably prove helpful to consider the teaching of English under a number of separate headings and to refer in turn to various branches such as oral expression, speech training, drama, reading, written expression and grammar. It would, however, be a serious mistake to regard these as separate and isolated activities. To do so would obscure what in fact is fundamental, that all these activities are ultimately directed towards the same goal, the growth of the child's personality through the development of his powers of understanding and expression. Moreover, to disregard the unity underlying all English activities is to ignore the fact that experience in one direction enriches and supplements experience in another. Thus, through reading and speech, ideas and information are acquired; these in turn provide material for and facilitate progress in written expression; through writing, ideas can be clarified, arranged and assembled for subsequent presentation either in speech or in writing.

For the practising teacher this essential unity has great significance. It permits and indeed demands versatility and enterprise in treatment and approach and creates ample opportunity for the exercise of initiative and personal choice. At the same time it calls for a lively and constant awareness of the ultimate aim. This can be achieved only by the employment of a well-considered and effective technique.

ORAL EXPRESSION

The ability to say accurately and intelligibly what he thinks is one of the most valuable attainments a child can acquire at school. It has long been recognised that encouragement of facility in speech should not be confined to special periods set aside for that purpose, but that it is at all times a matter of first importance to those responsible for the education of children. In English lessons it is the major consideration. To encourage this facility many activities are employed, such as conversation, description, narration, drama and verse-speaking. Where there is such variety of approach and method, there is a danger that the central unifying aim of all oral activities will be obscured and perhaps forgotten. Yet it is obviously necessary that there should be a clear and constant appreciation of the purpose

underlying this variety of procedure. It is to train the child to converse clearly, pleasantly and effectively in ordinary life.

The Teacher's Part

The teacher's role is of cardinal importance. To her falls the task of creating an atmosphere and environment favourable to linguistic development. It is important that the friendly relations which characterise the earlier classes should be maintained; for example, the readiness shown by many young children to express themselves freely, not merely on school topics but on everything that comes within their range of experience, should be preserved and fostered. In a classroom which is provided with a library, nature table, news sheet and interesting pictures there will be abundant material to arouse question and conversation. The children's needs and interests should be studied and, if sympathetically understood, will provide material for conversation, often surprising in its scope and detail. Patient and determined efforts should be made, by means for instance of excursions, reading, talks and broadcasts, to widen the extent of the pupils' knowledge. Above all, the teacher must believe sincerely and whole-heartedly in the value of what she is doing.

Class questioning has a significant contribution to make to the development of speech. The teacher's questions are designed not merely to test the pupil's comprehension, though that is important: wisely chosen they can also stimulate the child to independent thought and improve his control of language. A very profitable exercise, for example, is to ask a child to give a summary of the main points of a lesson.

It is unwise to require children to answer every question in a complete sentence, for this will lead inevitably to the growth of stilted and artificial English. At the same time, however, sound standards of conversation between teacher and pupil have to be maintained; the pupils' answers should be intelligible, self-contained, self-explanatory and of reasonable length. Nor should questioning be a one-way traffic; to get the children to ask a relevant question, framed with precision and with due regard to the conventions of questioning, is an achievement of distinct value.

Mistakes of grammar and usage will no doubt mar the pupils' speech. In dealing with them the teacher must exercise her tact and discrimination. On the one hand, children like to do things correctly; on the other, over-insistence upon correctness may make a child unwilling to speak: fluency and spontaneity in the children's speech should be the teacher's chief concern. With younger children mistakes are best treated incidentally and informally, the correct usage

being learned by ear rather than by rule; only later should a more formal treatment be adopted.

Speech as Communication

If facility in the speech of ordinary daily life is accepted as the general aim of oral activities in school, one conclusion of vital importance follows: the child must have abundant practice in the spoken language of daily life. He can in fact learn to speak only through practice in speaking. This practice will be the core and centre of the teacher's work; to it all other speech activities will be vitally related. It will include conversation, giving and understanding instructions, description and narration.

Conversation

Practice in conversation should form part of the training in oral expression, for of all forms of speech communication this is the most usual in daily life. To be profitable, conversation should be spontaneous; it is a part of the teacher's task to prepare situations in which conversation will arise naturally. In the stimulating and interesting environment of a well-appointed classroom younger children will find much to arouse their curiosity and provoke them to lively and spontaneous speech. Their readiness to discuss family happenings and incidents on the way to school should be encouraged; as they advance the range of topics should be extended. If the children are accustomed to ask questions during the course of lessons, opportunities for conversation will frequently arise. Where progressive and interesting teaching methods are employed the pupils' co-operation can be actively enlisted. Opportunities for informal but purposeful talk will occur in connexion with dramatic work and projects or centres of interest. In addition, imaginary situations, such as shopping expeditions and telephone conversations between pupils, can be created and used as supplementary devices.

Giving and Understanding Instructions; Description

The teacher's main task is to see that work under this heading is related to the activities of everyday life, and that the desire for self-expression is felt by the pupils. Judicious selection of exercises will make the realisation of these aims possible: at first they will be simple but afterwards more complicated. Throughout, the adequacy of the child's speech can be tested by reference to such obvious standards as the degree of success attained in carrying out the instructions given and the ease with which the attention of the listener is held. Examples of this type of exercise will readily occur to the teacher and

need not be stated here at any great length. Often they will arise naturally from the day to day life of the classroom: a child may, for example, explain how the class is to enter and leave the room, or how the milk is to be distributed and collected; how kerb drill or fire drill is to be practised; or inform a visitor what the class is doing at any particular period. In home activities will be found an inexhaustible source of material suitable for exercise in accurate description: a girl may be asked to tell how a certain cookery dish is made, how the table is set, how a bed is made and the washing-up done. The laying of the fire, the tying of a parcel, the cleaning of shoes – these are among the countless activities of daily life in the home which are eminently suitable. The teacher in the country school is doubly fortunate, for she can also make use of her pupils' knowledge of the manifold and ever-changing occupations of farm and field. All such activities are material for speech practice of the type referred to, the use of language in the ordinary affairs of daily life. They fall within the children's experience and the adequacy with which they are described is capable of demonstration.

Narration

The re-telling of stories is a speech exercise familiar to most teachers. In everyday life ability to do this has its value, not merely for entertainment but also for practical purposes. The relation of incidents forms in fact a large part of the spoken language of daily life, the type of speech in which facility is most desirable. If, in the past, the re-telling of stories has proved less successful as a school exercise than was expected, failure may have been due rather to defects of treatment than to any fault inherent in the exercise itself.

It is a mistake to require children to reproduce, word by word, every story they hear or read in class; to do so would prove a dull, uninteresting, and even harmful occupation. Many stories are best left to create their own immediate impression; and in any case when a story is known to the class, the narrator lacks the stimulus of an interested audience. As always, variety of treatment goes far to ensure success, and the greater the scope afforded for the use of the imagination the more valuable, as a rule, will the activity be. The following exercises have proved successful. A pupil may be asked to tell the story of a film he has seen or a broadcast he has heard, or to relate an incident from a book he has read on his own. Or again, a story can be built up from a given outline, a skeleton of key-words put on the board. Supplied with the beginning of a story a child can be asked to complete it; 'What happens next?' is a useful question to put. If the children, or some of them, show willingness to relate their

own experiences, or display the ability, as some do, to weave these experiences into story form, perhaps introducing their companions, they should be given every opportunity to do so.

Listening

Training in listening is an aspect of the work to which greater attention may profitably be given. Modern devices, such as the telephone, the dictaphone and radio, have increased the importance of the spoken word. It is, therefore, part of the school's task to make pupils more efficient in the understanding and appreciation of spoken English. Every lesson, every broadcast heard in the classroom, can be a lesson in the art of listening; but in addition to this constant practice more guidance should be given. Since children listen best when their interest is aroused, the greater the interest, the stronger the attention. Natural interests can be augmented, and to broaden these interests is to increase the power of attention. Further, the children may be asked to note the presence or recurrence of specific features in a poem or extract to be read aloud, to look for the main points in a discussion, to criticise the substance of a broadcast, or to put questions to a speaker. Generally, by careful preparation and purposeful questioning the children's ability to listen can be developed.

SPEECH

Speech training exercises, that is, exercises designed to effect improvement in the more mechanical elements of speech – articulation, pronunciation, intonation and phrasing – are best regarded as measures supplementary to the more general oral work. They should be used to promote specific improvements, the main approach to the development of the children's speech generally being through the oral activities of the classroom as described elsewhere in this programme.

It is indisputable, however, that the speech of many children does require special attention. Defects which arise from physiological or psychological causes should be treated by a speech therapist, but with less serious defects the teacher should be ready to deal. Frequently improvements can be effected through the influence of the teacher's own speech: if this is clearly articulated, well-modulated and pleasant, it provides an example which the children can profitably copy. If, in addition, all members of staff co-operate in setting and requiring sound standards of speech, a pervasive influence for good will have been created.

With younger children example and influence of this sort are often sufficient, and for this reason it is not considered advisable, as

a general rule, that formal speech exercises, as distinct from speech rhymes and jingles, should begin before Primary 4. But with older children a certain amount of direct training is often necessary, and it is part of the teacher's responsibility to meet this need. Her ear should be alert to detect the principal mispronunciations of the locality and she should have some knowledge of how sounds are correctly produced. She will wage a spirited and unceasing war upon defective and slurred articulation, particularly the mispronunciation or omission of consonants, initial, medial and final. In this part of the work exercises such as jingles, tongue-twisters and patter rhymes will prove invaluable, for their effect is to improve activity of the jaw, lips, and tip and back of the tongue. Poorness and harshness of tone, where they occur, will receive attention, possibly through singing on vowel sounds, vowel combinations and voiced consonants. Modulation of pitch, and attention to stress and phrasing should also be cultivated. Good posture and good breathing are both of great importance in securing pleasant speech and the teacher should spare no pains to help her pupils to acquire them.

A few general principles to guide the teacher's approach to this part of her work may prove helpful. Speech training, it should always be remembered, is a means to an end: its value must be assessed by the improvement it effects in the children's ordinary speech, in the verbal give-and-take of the classroom and in oral activities such as dramatisation, reading and recitation. The remedial work undertaken should be purposeful in the fullest sense, based upon and vitally related to the observed needs of the pupils. For this reason frequent and brief spells of speech training are generally more effective than lengthy periods at less frequent intervals. The work should be enjoyable and vigorously undertaken and should aim at the encouragement of good speech habits as well as the eradication of faults. Throughout there should be an appeal to the children's imagination, for the imagination must be active if speech is to be expressive. The teacher should endeavour to create situations in which the children see the necessity for pleasant, well articulated speech. They might, for example, be asked to use the telephone, take part in interviews, or announce the items of a concert programme. A microphone attachment to the radio installation can be used by the children to broadcast talks, stories and plays to their classmates.

Finally, no attempt should be made to foster a mode of pronunciation alien to Northern Ireland. There are many acceptable and pleasant variations of the English language and it is not for the schools to decry any genuine local speech: good Ulster speech, care-

fully spoken and clearly articulated, has its own distinct charm and appeal, which it is our duty to preserve and pass on to the children.

DRAMA

The value of dramatic work is being increasingly recognised in schools. It is now commonly regarded as an indispensable part of the English course. Many, indeed, viewing dramatic activity as a development of the creative play of childhood, consider it essential to the harmonious growth of a child's personality. With most children it proves extremely popular: to the younger it is a form of play and a mode of self-expression to which they readily turn; older pupils seem to find in it real emotional satisfaction. In acting, a child can gain in poise and self-confidence and find abundant scope for his initiative, while the fact that children and teacher alike are working for a common purpose does much to promote desirable relations in the classroom. Dramatic activity, perhaps more than any other, brings home to the child the need for expressive, fluent speech, clearly articulated, and so strengthens the incentive to make the best use of the voice. In addition, dramatic activities transcend the traditional but largely artificial boundaries of school subjects, fusing them into a unified and significant whole. The broader sympathy and the wider knowledge of one's fellows which dramatic experience inculcates enrich understanding. Nor is the actor the only one to profit by these activities. To the spectator also they bring some gain. He too can see, as it were, the printed page come to life before his eyes, its situations made real and tangible, and its people acquire a living and recognisable form.

In her treatment of dramatic activities the teacher's best guide will be her experience and knowledge of her class. The following observations, however, are of general import and may prove helpful. The relationship between teacher and children is perhaps the most important factor in the success of the dramatic activity lesson. The freest possible type of discipline is necessary if the children's powers of self-expression are to be encouraged. In school the most valuable form of dramatic activity is that which allows scope for the child's realistic and imaginative play. Directions by the teacher should therefore be as few as possible; suggestions and criticisms should come rather from the class. To encourage the children to see, think and feel imaginatively will be the teacher's most vital contribution. Her aim should be to give stimulus and encouragement and to present her material so that for the children it always provides a creative experience, an opportunity for the free use of the imagination and the exercise of self-expression.

Since children's powers of self-expression are, as a rule, most readily awakened through movement, there should be at all stages, but particularly at the beginning, ample opportunity for realistic and significant movement. Occupational movements provide a rich and splendid source of material suited to this purpose. Tinker, tailor, soldier, sailor – all have their characteristic actions, and in presenting them the children can find endless opportunities for the expression of the imagination in realistic, appropriate and enjoyable movement. In domestic and everyday activities, such as making a cup of tea, chopping wood, carrying coal, lighting a fire, using the telephone with directory and dial, will be found another inexhaustible store. From mimes in which one or two children take part and one or two actions are represented a natural development is to a series of actions involving several characters: suitable examples might be doctor, nurse and patient; tailor and customer; picnic with preparations, journey and meal. Through activities of this type the child is helped to concentrate his imagination on the creation of characters.

When the children show ability to create their own plays, they should be fully encouraged to do so. An abundant source of material for dramatisation is to be found in ballads like 'Sir Patrick Spens' and 'Green Broom', in narrative poems like 'The Pied Piper of Hamelin' and 'Lochinvar', and in stories that children have read or heard in school broadcasts. Sometimes an impromptu treatment will be desirable; at other times various members of the class may co-operate in writing a playlet which they subsequently act. Story adaptation provides many opportunities for purposeful discussions leading, amongst other things, to the reconstruction of the plot, the making of a list of characters, and, if necessary, the selection and recasting of the parts of the story to be told by a Narrator or Chorus. Adaptations made in this way are likely to contain a form of dialogue which may be rapidly memorised by the children and spoken with ease, sincerity and confidence. Such plays devised by the children have an undoubted educational value and provide an acceptable approach to the study of literature. In addition, many ready-made plays for class use are obtainable and may be found useful, but as their form and dialogue have not had their origin in the minds and feelings of the children, their value falls below that of playlets collectively made by the class.

Puppetry and the microphone play are forms of dramatic activity which should not be overlooked. Puppetry is particularly valuable in helping shy children to overcome their reticence; hidden behind a curtain or screen they soon lose their self-consciousness and learn to speak fluently when making the puppets act for them.

All members of the class should be given an opportunity to take part in dramatic work; some may join in crowd scenes; others may form a critical audience; and children can take turns in prompting. A few simple properties should be available in every classroom, for they help to make the lesson more satisfying and stimulating to the imagination. More elaborate equipment, such as scenery and special lighting, which might be used in a full scale production, can provide a valuable incentive.

POETRY

Poetry is read in schools to give the children delight. This they will find in sharing the creative experience of the poet and in appreciation of the fusion of thought, imaginative insight, imagery, rhythm and beauty of sound which his work displays.

The poems chosen for study should have real literary value and be free from the archness and sentimentality too often found in poems written down to what is conceived to be the children's level. They should have vitality and sincerity and relate to something in the life of the child. Well-marked rhythm, beauty of word, stirring and significant repetition are features which usually appeal to children. Narrative poems and ballads are specially suitable, particularly those which are vigorous, swift-moving and simple in diction and verse-form. Descriptive and humorous verse should also have a place.

Success in the treatment of poetry depends ultimately upon the teacher, her responsiveness to literary appeal, her ability to read sensitively and her understanding of her pupils. She must have some genuine appreciation of poetry, must be sincere in her conviction, and yet have full respect for her pupils' developing personalities.

Variety of treatment is desirable, but the approach adopted should always help towards the main end, the deepening of the child's experience of poetry. Many narrative poems and ballads lend themselves to dramatic presentation. Sometimes – with shorter poems especially – some members of the class may act or mime the story, while others read or recite the narrative parts of the text; with longer narrative poems a freer, more general presentation of the story of the poem may be preferred.

When different characters appear in a poem or when rhythm and metrical qualities are prominent the appeal is often enhanced by choral speaking or a mixture of unison and individual speaking. Spontaneity should be put first, the children rather than the teacher suggesting the mode of treatment, and technicalities should be introduced only gradually.

At the same time exclusive emphasis on dramatic or choral interpretation is not advised. While it is true that a presentation in terms of speech and movement may help many to realise that the poem lives, there are dangers in the method. The appeal of imagery and atmosphere may be weakened and the class may ultimately be left with one interpretation and impression only. Sometimes poems may be treated mainly as topics for discussion. The sense may require elucidation, though some parts will perhaps be left unexplained; some discussion of sound effects may be considered advisable, provided that there has first been enjoyment and experience of them; consideration of imagery may also be attempted if the experience suggested by it has been really felt. Drawing and painting, too, are often suitable ancillary exercises, provided the child is allowed to interpret the poem freely in his own way. Such drawings may be used to illustrate a personal anthology compiled by the child himself.

Since memorisation of poetry enables the children to enter into fuller possession and enjoyment of the poem, rightly approached it is a valuable practice. It is not considered necessary that children should be asked at all times to memorise the same poems; some freedom of choice should be allowed, for children will learn most easily poems which have made a special appeal to them. Learning by heart should form one of the later stages in the treatment of a poem and should be preceded by other activities such as those suggested above. With a little ingenuity much of the drudgery of memorisation can be avoided. Before the task of memorisation begins many of the phrases of the poem should be echoing in the child's mind, something of its meaning should have been grasped, and most of the verbal difficulties removed.

There will, however, be occasions when the teacher, remembering that the end of poetry is the awareness of a new experience and that activities, though enjoyable in themselves, may form a barrier between the child and the poet, decides to leave the poem to make its own impression.

A wide selection of poetry should be at the disposal of the children. Anthologies of suitable verse should find a place in the class library; use should be made, whenever possible, of broadcasts and recordings of poetry; and the teacher should not hesitate to supplement the store available by reading suitable poems which have given her special delight.

READING

Reading is a skill essential to success in school. On an early and secure consolidation of reading skill depends not merely the child's

progress in most of the other school subjects but to a large extent his general happiness too. But not only is there a skill to be mastered: its application has also to be practised. The art of understanding what is read has to be developed; something of the value and pleasure to be obtained from books, both as sources of information and as means of recreation, has to be experienced; something of the contribution which they can make to the development of interests and the growth of personality has to be realised. For the aim is the development of alert and well-read children, accustomed to use their reading ability both for leisure enjoyment and for gaining information.

In most primary school classes it will be found that children of the same chronological age vary considerably in reading attainment. This disparity may be most marked in junior classes but it exists in some degree in well-nigh all. To cope successfully with the serious problems which it creates is a task demanding skilful and unremitting attention. A teacher will require, for instance, to have some knowledge of methods of assessing attainment in reading, in order that she may form groups of roughly equal ability and be able also to measure the progress of individual pupils. A variety of standardised reading tests is available, but care should be exercised in the interpretation of their results, which may vary somewhat from series to series. It is probably more advantageous to use one series only. Overtesting and testing at too frequent intervals are to be deprecated.

It is important that the teacher should familiarise herself with methods used for teaching reading in the early stages and should have an understanding of the work done by her own pupils in previous classes. Everything possible should be done to ensure continuity of progress: the reading books issued to a child should be suitable for his stage and in accordance with his reading ability; they should be neither too easy nor too difficult, but in vocabulary and interest should mark a gradual but definite progression; selection and grading by the teacher from the abundance of material now available are necessary, if the abler children are to be extended to the limit of their powers while the more backward readers are working within their capabilities; and the teaching too should be vitally related to the pupils' needs.

The Organisation of Reading Lessons

The organisation of reading in the junior classes should be designed to suit the children's needs and abilities. A reading lesson may take one of a variety of forms, according to the particular purpose the teacher has in mind. There will be times when the class is working in groups, endeavouring to improve mechanical skill in reading. At

other times the class will be a unit engaged under the teacher's direction in close and detailed study of some extract. Individual reading for detailed study, general information or recreation will also receive due attention and practice.

Group Lessons

Lessons with groups of children will be a feature of most primary school classes, their chief aim being the improvement of the mechanics of reading. The need for lessons of this type arises mainly from the fact that within the same age group children vary considerably both in general intelligence and in reading ability. If special attention is not given where it is needed, there is danger that the poorer readers will stagnate verbally and that failure in reading will bring with it failure in other subjects. The greater part of the time in Primary 4 will be devoted to group or class teaching; but as proficiency is attained this should decrease with a corresponding increase in the time devoted to individual reading, until in Primary 7 individual reading occupies the greater part of the time available.

During group lessons three or four groups graded according to reading ability may be simultaneously engaged in reading, each group obtaining maximum practice with material suited to the pupils. Obviously the teacher can give direct attention to only one group at a time, but by thoughtful anticipation she can ensure that the other sets are profitably occupied. The groups not under direct instruction may, for example, be engaged in reading occupations or motivated silent reading – reading with a view to answering questions previously prepared by the teacher. At other times some of the sets may be placed in the charge of group leaders and have practice in reading aloud.

What the teacher does with her group will be determined by its needs. With a weaker group in a junior class much direct teaching on lines similar to what was done in the earlier classes will be necessary. Weaknesses in reading should be carefully diagnosed. The possibility of retardation from physical causes such as defective hearing or seeing, should not be overlooked. Bad phrasing, which often arises from faulty teaching methods in the early stages or the use of too difficult reading material, must be corrected. A liberal supply of easy reading material and careful attention to the pupil's understanding of what he reads prove helpful in dealing with this defect. Defective left-to-right eye-movement, resulting in poor word recognition, may require attention. Phonic training, practice in word-building and word analysis, and much reading aloud are also frequently necessary.

Class Study Lessons

For reading-study with the class as a unit a common book, if possible within the comprehension of all members of the class, is necessary. It will be mainly an oral lesson. After the reading of the passage silently or aloud there will follow question and discussion. Three aims might govern the teacher's treatment: comprehension of the extract read; vocabulary study; and extension of the pupils' general knowledge. Vocabulary study would include the examination of the meaning of words and phrases, appreciation of differences in shades of meaning, and practice in the use of new words. Discussion should be bright and purposeful, leading perhaps to the making of a general summary of what has been read, some critical assessment of its truth, and the framing of an intelligent comment upon the passage as a whole.

For this type of lesson to be successful the class will require to have overcome most of the mechanical difficulties of reading. A beginning with class study lessons may normally be made in Primary 5; thereafter they should be increasingly frequent. Where, owing to the presence of a number of backward readers, it is not feasible for the class to work from one common reading book, two books will probably be found necessary for class study, the easier one for the use of the poorer readers.

Individual Study Reading

As soon as the children have mastered the mechanics of reading a start should be made with individual study reading. This will be mainly a silent occupation and the teacher's task is to see that the exercise is as real and meaningful as possible. The most usual form of this exercise will be for a child to make, with the help of a dictionary, a thorough and exhaustive study of a passage, perhaps with a view to answering questions based on it. Sometimes, when for example the pupils are looking for material for a play, they may read to grasp the general drift of a passage. On other occasions, perhaps in connexion with projects and centres of interest, they will learn how to make books yield the particular information that is required. At all times the pupils should be clearly aware of the purpose behind the reading exercise.

Libraries

Every class should have at its disposal a well-stocked library containing a varied selection of interesting books. Works of fiction will no doubt predominate; but if the children's growing interests are to be satisfied, other types, such as books about animals, hobbies,

handicrafts, exploration, scientific discoveries and famous people should be included. Greater variety, with more economical use of money and space, is possible if individual copies rather than large sets of the same book are purchased. A place should also be found for magazines and newspapers of the sounder type. A good dictionary, a junior encyclopaedia, and an up-to-date, reliable atlas should be accessible to the various classes in the school.

If the class library is maintained in as attractive a condition as possible the children are more likely to regard it as a source of pleasure. The books should be modern in their information and contemporary in spirit, and if the original dust-jackets enhance their appearance, steps should be taken to retain them as long as possible.

The children should be given every opportunity of using the library. The week's programme of work could with advantage include a library period. In it the children might give an account of the more interesting or exciting parts of some of the books they have read, or alternatively the teacher could use this opportunity to read suitable extracts, thus widening the range of the pupils' reading and opening up new interests. The teacher should also give advice and training in the care and use of books.

WRITTEN EXPRESSION

If written expression is to prove a pleasurable and worth-while activity favourable conditions for its development must exist. The children must feel at home with the topic on which they write; otherwise it is improbable that their writing will reveal those qualities of ease and vigour, vitality and freshness which give it value and hold promise of further progress. To ensure, then, that the pupils have, in fact, an adequate background of knowledge and experience and to relate the topics with which they deal to this background are matters to which the most careful attention should be given. The importance of a stimulating and interesting school environment becomes clear. Where there are books to supply ideas and information, opportunities for activities which widen experience, and an atmosphere in which question and conversation can flourish, a foundation essential to the achievement of skill in writing is being laid. But although this foundation is essential, it is not enough; something more is required. Before writing can begin there must be time for the re-call of the relevant information or experience and opportunity for putting it into words. With younger children this can best be done orally in class, the teacher guiding but not dominating the discussion, drawing out ideas, not supplying them. There is an obvious danger here; the weaker children will wait while others talk.

By sympathetic understanding and patient encouragement the co-operation of the more reticent pupil can often be secured. With older pupils a less direct or more general approach is often preferable, the immediate application to the work in hand being left to the class. For example, before asking the children to write an account of a particular person, place or experience, the teacher might draw their attention to the importance of such qualities as accuracy, relevance and orderliness. The objective, however, should be to train the children to assemble and, if possible, organise their ideas for themselves.

If enthusiasm for writing is to be maintained, not only must the pupils have plenty of material to write about but they must also see and appreciate some purpose in writing. The creation of situations in which the children will feel the necessity for writing becomes then an important part of the teacher's task. To do this she could, for example, introduce activities which provide occasion for writing and place various kinds of compositions in a practical setting. Work on project lines and work arising from centres of interest are examples of such activities. Thus a class engaged on the compilation of a guide book to the town and district would find many realistic occasions for writing: letters of inquiry to obtain information, letters of thanks, descriptive and geographical accounts, historical anecdotes, directions and instructions – there would be need for all these. If linen or houses or food or the history of the school were made the centre of study a similar variety of situations leading naturally to written expression would arise.

Where a more traditional approach to the teaching of school subjects is adopted, it is still possible for the teacher, by the exercise of her ingenuity, to place each kind of written composition in a realistic setting which makes appeal to the individual child.

In the ordinary events of school and home life there are many occasions for the writing of letters. In addition, the pupils might also correspond with children in other schools, write letters to the crew of a ship adopted by the school, request information from travel agencies, and send letters of thanks to the managers of factories and establishments they have visited.

The writing of diaries can also be encouraged. In them the pupils could write about personal experiences, give accounts of class or school activities, or record the observations and discussions arising from their study of natural phenomena.

The production of class magazines provides a valuable occasion for various forms of purposeful writing. In addition to accounts of personal and communal experience there is scope for creative

writing, which may take the form of stories, simple plays and verse.

A further valuable exercise in composition is the description of interesting objects and processes. For example, pupils might be asked to describe important buildings or places in the neighbourhood, tell how a simple activity of daily life is performed, or describe the working of a simple kind of mechanism.

Opportunities should also be provided for the re-telling or composing of stories. The repetition of the original words of a story has little value except perhaps for the weakest pupils. Abler children normally find pleasure in exercises which make a greater appeal to the imagination, such as composing a story from either a beginning or an outline supplied by the teacher or inventing episodes to fill a gap in a series of events. In the junior classes there should be a continuation or development of the type of exercise begun in Primary 2 and 3, the children drawing pictures and building stories around them. As an alternative to this activity, interesting illustrations may be taken from magazines and the children encouraged to invent stories about them.

It is not advisable to restrict written expression in any class to a particular type of composition: such a restriction would be artificial and unnatural. At all stages of the primary school course the teacher should provide adequate opportunities for practice in as many as possible of the types of written expression outlined above, taking care to ensure that the pupils have plenty of material to write about and that they see a purpose in their writing. At the beginning, freshness and fluency are the main qualities to be encouraged. For this reason, up to Primary 6 pencils should generally be used for written expression. Given the conditions outlined above, improvement should take place, marked by an increase in the pupil's vocabulary, greater aptness in its use, and growing skill in the construction of sentences and in the arrangement of ideas.

Technique in Writing

For most pupils it is not enough to provide only material and incentive for writing. Definite training in the mechanics of writing and in the adequate expression and arrangement of ideas is also necessary if correctness and quality are to be developed. This work should arise from and be closely related to the needs of the pupils as revealed by their written work. Since, in any one class, the range of ability in written expression is wide, individual attention will often be necessary in addition to class instruction. The teaching should be positive and constructive, the aim being not merely to indicate

faults but to help the pupils to improve on what they have done.

Punctuation requires thorough teaching. By the age of 11 a pupil should normally be familiar with the correct use of the full stop, capital letters, comma, question mark, inverted commas and apostrophe. The use of the full stop must be mastered early, if possible in Primary 3, for it is the basis of composition. Due attention should therefore be given from the start to the formation of the simple sentence and the use of capital letters. Subsequently, possibly in Primary 4 and Primary 5, practice should be given in expressing simple ideas in different forms, as for example by inversion or by the use of phrases and clauses. The use of the comma will arise naturally in this connexion and should receive due attention. Primary 6 and Primary 7 are probably the most suitable stages at which to introduce the teaching of the use of quotation marks and the apostrophe.

Exercises to show the practical importance of punctuation should be regularly set. The reading aloud by the children of their own written work is often helpful in teaching the use of the period and the comma. Through extensive reading children acquire a knowledge of punctuation incidentally; but direct teaching, arising perhaps during a class-study lesson, is necessary for the clarification and consolidation of this knowledge.

It will often be found that the children need help in the arrangement of their ideas if they are to set them down in a systematic order. To show them how to make a plan may be of service, but there is the danger that a particular plan may be followed blindly and no lasting benefit derived. The drawing of diagrams or pictures by the children to set out the steps in a process or to show the sequence in a number of incidents may help. With older pupils the study of suitable passages, as models, often proves profitable.

Finally, importance should always be attached to the content of what the child writes and to the quality of the ideas expressed. The child should be given every encouragement to write in a fresh and interesting way; if his ideas are dull, vague and generalised, the need for attention is evident.

A word of advice about the use of text books in English composition and usage is necessary. Although many of them contain helpful and readily accessible suggestions and exercises, their limitations must be clearly recognised. The exercises suggested can never take the place of purposeful writing arising out of situations that interest the pupils. The value of even the best of such books is inevitably lessened by the fact that it was written in ignorance of the needs of the pupils who

use it. In consequence these books must be handled with intelligence and discrimination. The constant endeavour of a teacher using them should be to relate them to what she has discovered about the actual needs and difficulties of her pupils. She may regard them as a source to be tapped when it is necessary to supplement the exercises she has devised to meet the particular needs of her pupils.

Marking is best regarded as a preparation for both individual and class work. Over-correction is to be avoided as it tends to discourage the children. Some errors, those peculiar to the individual pupil, will be indicated perhaps by a symbol – e.g., Sp. for spelling – the child being left to correct them. Points of merit may also be indicated by means of a tick or a star. For class work, errors common to a number of children can be selected. Examples, both of the errors of some and the ways in which difficulties have been overcome by others, should be noted and used for class work. Throughout, the teacher should keep in mind the importance of developing the pupils' critical powers, for practice in self-criticism and the growth of a sense of responsibility undoubtedly assist in eliminating errors.

GRAMMAR

The aim in the teaching of grammar in the primary school is to give children some simple standards by which correctness in speech and writing may be judged. Both the content of the course and the method of treatment should be closely related to this aim.

Mistakes in grammatical usage should be dealt with incidentally and in general terms from the start. This non-technical treatment should continue throughout the school but from Primary 6 onwards it should be reinforced by a fuller and more systematic treatment. Care should be taken to avoid the use of grammatical terms beyond the pupils' power of comprehension; only such terms as are necessary to explain the difference between correctness and incorrectness in the use of the language should be learned. Elaborate definitions should be avoided. Instead, the children should begin with a simple and general notion of a grammatical term and gradually evolve a fuller and more precise definition. Sentences chosen for grammatical study should be interesting and attractive; often they may be supplied by the children themselves.

The following elements in grammar should be specifically taught in Primary 6 and Primary 7:

In Primary 6: The division of the simple sentence into two parts, subject and predicate.

Recognition of noun, verb, adjective, adverb and personal pronoun.

Singular and plural of nouns.
Agreement of verb and subject.
In Primary 7: The object and extension of verb in the simple sentence.
Recognition of preposition and conjunction.
Possessive case in nouns.
Case in personal pronouns, including case after prepositions.
Use of relative pronoun.
Tense in verbs: past, present and future.
Distinction between past tense and past participle.

An understanding of the terms and conceptions listed above will facilitate discussion of most of the grammatical errors likely to be prevalent. It is to the elimination of such errors that the teaching should in the main be directed. Formal exercises in analysis and parsing should so far as possible be avoided. Training in synthesis, as an aid to sentence-construction, may profitably be given.

SPELLING

With most children, systematic teaching is necessary if they are to spell correctly. In Primary 1 and Primary 2 the pupils will have learned to spell many words incidentally, through reading and writing. Phonic training also assists this incidental learning. Later, possibly in Primary 3, a beginning can be made with the systematic teaching of spelling. A further important stage is reached when the pupils have acquired the ability to analyse words into syllables, both aural and visual. Throughout the primary school opportunities for the incidental treatment of spelling will, of course, continue to arise, perhaps most frequently in the speech training lessons. But, from about Primary 3, direct teaching becomes necessary.

The process of learning to spell should be made as stimulating and profitable as possible. Only a few new words should be learned at one time; the periods devoted to spelling should be short but frequent and there should be adequate revision. Before words are set for learning, the pupils should understand them and be able to use them in sentences of their own. Since children generally learn to spell through the eye rather than the ear, the main emphasis should be upon visual methods. Care should, therefore, be taken to ensure that they are thoroughly familiar with the appearance of the word: they should see it in print and write it for themselves. For the same reason, spelling tests should be written and not oral. With young children, tracing a word in the air or on the desk is often helpful. New words occurring in class lessons, for example geographical terms, should be written on the board and the children's

attention drawn to the correct spelling from the start. When new words have been mastered, the pupils should be encouraged to use them in their own writing. Spelling games, such as lexicon, codes, anagrams, cross-word puzzles and spelling-bees, which arouse interest in words, have also proved valuable. The importance of certain spelling rules, such as the dropping of 'e' before '-ing', the changing of '-y' into '-ies' in the plural, should not be overlooked. The children may also be encouraged to keep their own word lists, arranged in alphabetical order, and be trained in the use of a dictionary, particularly in Primary 7.

For the minority of children who show inability to learn and remember through visual images, muscular and aural impressions should be emphasised. These children should have much practice in tracing and writing the word and in pronouncing it correctly. Where there is a wide range of ability in spelling, the children should be taught in groups. The new words to be learned by the weaker pupils should be few and carefully chosen.

The words to be taught should be those occurring most frequently in the child's vocabulary. They may be chosen from various sources. Use should be made of graded spelling lists based on frequency of child usage and having the words arranged in groups which facilitate learning: names of associated articles, words similar in structure, and words with the same silent letter lend themselves to such grouping. If caution is exercised, words may be selected from the reading book; but the practice of requiring children to learn miscellaneous words picked merely for their difficulty from a page in the reader has nothing to commend it. Nor should reading be held up until all the children have learned to spell all the words they have thus far met. The errors occurring most frequently in the children's written work should be noted and dealt with during spelling practice. The teacher should, if possible, endeavour to investigate the cause of the error, differentiating between motor mistakes, visual mistakes, and mistakes arising from faulty hearing and pronunciation.

Dictation

As an occasional exercise, taken perhaps once a fortnight, dictation is useful. It serves to test but not to teach spelling and it can be used to develop speed in handwriting and as an exercise in punctuation. Unprepared dictation should be avoided as a teaching device: it tends to cause the children to mis-spell.

GENERAL

So far little indication has been given regarding the time to be allocated to the various branches of English. Indeed, no definite apportionment can be laid down. The teacher must be guided by the observed needs of her pupils. Bearing in mind the ultimate aim she should maintain a balance among the various branches and ensure that no one predominates to the detriment of others and that none is neglected. A few general statements are offered as guidance. In speech training and spelling short periods of, say, ten minutes, daily if necessary, are desirable. Since oral proficiency should precede written proficiency, a much greater proportion of time should be allotted to oral activities than to written work in Primary 4, gradually decreasing in subsequent classes.

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HANDWRITING

The transfer from the script writing learnt in Primary 1, 2 and 3 to the form of handwriting adopted in the upper classes of the school should not take place till the children have acquired some fluency in reading. In most cases the change will be initiated at the end of Primary 3 or the beginning of Primary 4. Script writing should, however, normally be retained for composition until the connected hand is well established, and for the writing of captions and labels.

The style of handwriting to be used in Primary 4 and upwards is a matter to be determined by each individual school. Some schools may prefer a linked script, since it is clear and simple and involves no change-over to new forms of capital and small letters; in others, one of the types of cursive writing derived from the copperplate hand may be preferred. It is important, however, to ensure that there is a common style of handwriting from Primary 4 onwards.

Differences in eyesight and in muscular control suggest that it is inadvisable to insist that all children should make their letters of uniform size. Single lines, widely spaced, will allow the child in Primary 4 to produce writing of a size suited to him individually. As he advances through the school and his power of control increases the space between lines may gradually be reduced. He should also be given practice in the use of unlined paper at all stages.

The use of pen and ink for formal writing lessons should not be introduced before Primary 5 and certainly not before the children have had ample practice in writing in pencil. The transition will be most easily effected if the penholder approximates in thickness to the pencil used by beginners and the nib is not too finely pointed.

The adoption of a comfortable writing position should be encouraged from the start, the left arm, with right-handed children, being used to support the weight of the body, whilst the right hand rests lightly on the fourth and third fingers. The aim should be to develop a free and flexible hold producing writing which is fluent and not laboured. The angle of the penholder to the paper – the base of which will normally be parallel to the front edge of the desk or table – will depend on the type of nib and the style of handwriting adopted: for a copperplate style, written with a pointed nib, the holder might point over the right shoulder; a pen fitted with a square-cut nib, on the other hand, might point outside the right elbow, especially if used by a writer of linked script.

The teacher's writing on the blackboard will normally serve as a model, but whenever possible she should provide examples in the writing books of individual children, especially in those of children who develop slowly. Her own handwriting must be at all times worthy of imitation, and if she has any weakness in this respect it may be advisable to introduce the desired pattern by providing suitable handwriting cards.

Although it will be necessary to give practice in handwriting, particularly in Primary 4 and Primary 5, writing exercises need not be dull and devoid of interest. Uniformity of size, regularity of spacing and fluency may be promoted whilst the children are making artistic patterns based on the style of writing adopted. Again, the transcription of a favourite poem into their personal anthologies may give pleasurable purpose to their efforts. By the end of the Primary 7 year a child should be able to write in ink legibly, with reasonable speed, and with a uniformity of letter size, spacing and slope which, on a completed page, will create an immediately favourable impression.

The left-handed writer requires special care. The provision of a special nib, cut obliquely, removes one of his difficulties. Before encouraging him to use his right hand the teacher should seek the approval of the parents and the advice of the medical officer. If the child is not fully left-sided no harm may result from the change-over, but if symptoms of anxiety, nervousness or frustration develop, he should be allowed to revert to his natural bent.

Chapter III

ARITHMETIC

THE primary school Arithmetic course falls naturally into two parts. Each of these divisions is dealt with in a separate section, in which both content and approach are considered in detail. Each section is preceded by some discussion of the particular problems involved, but it is desirable to mention here some general considerations applicable to all stages of the work.

The most important of these are concerned with the question of aims. The inclusion of Arithmetic in the curriculum can always be justified on utilitarian grounds. The mastery of a small number of processes and arithmetical ideas (a smaller number than is generally supposed) is essential for any efficient and responsible person, and *complete* mastery is the only reasonable goal in the teaching of the necessary foundations. For a large and growing number of technicians it is of course an essential tool subject. But more than this is involved. Arithmetic affords an introduction to a fundamental mode of thought, one that has been developed in most civilisations and is of very great importance in our own; this introduction should be such that the small but important class of future mathematicians is encouraged, not repelled. It is also most desirable for the teacher to realise that, as well as affording, inevitably, a field for hard work, Arithmetic should furnish for most children considerable enjoyment. Those fully capable of appreciating the 'beauty, cold and austere' of Mathematics are few, but Arithmetic can offer its own peculiar satisfactions to many – the joy of discovery, the feeling of satisfaction engendered by its finality and complete logical coherence, and the occasional flash of insight that illuminates what has been obscure. If the teacher is not aware of these possibilities, and does not help in their realisation as far as her pupils' individual capacities permit, a great deal of pleasure is lost and, possibly, considerable resistance to the subject engendered.

The lists of processes thought suitable for the various stages are precise and definite; the practical approach so often referred to later on cannot be laid down with the same precision, and must depend on the opportunities offered by the environment and on the initiative of the teacher. There is therefore a danger that the layout adopted in this programme may appear to imply that the development of abstract manipulative skill should be the primary object of the

teaching. It is very important that the details of the year's work and notes on teaching given for any particular class should be interpreted in the light of what is said in the general notes preceding the section concerned.

The remainder of the considerations referred to in the opening paragraph are more specific, and are given below.

Testing

Formal class or group testing has no place whatever in Primary 1, and its value is doubtful in Primary 2. Testing at these stages needs to be individual, and its purpose is not to serve as an incentive to effort but to help the teacher to assess the effectiveness of her teaching, to ascertain individual difficulties and to plan future work. In Primary 3 and later any testing should be based on a full knowledge of the work covered by the various groups; careful records should therefore be kept by the class teacher. When mastery of the fundamental number combinations is being checked, care must be taken to distinguish between the response which is desired – automatic because the fact has been memorised – and the response which is arrived at by some form of counting or computation.

Uniformity of Method

In the later stages of the work, for example in the multiplication of money, though the pupils should have mastered some standard method on which to fall back if need be, it is worth while training them to select a shorter method where this is appropriate to the quantities concerned. But for fundamental processes, such as subtraction, for which a choice of methods exists, it is highly desirable that one standard method should be followed throughout the school. If, however, a child has learned elsewhere some different, but valid, method, the decision to compel him to change should not be taken lightly.

Accuracy

Within the processes that are being taught 'for mastery' it is proper to demand a very high standard of accuracy, and when mastery of some straightforward mechanical work is under review the criterion should not be the percentage success achieved by individual pupils, but rather the percentage of pupils achieving complete success. To this end training should be given from the early stages in the constant checking of written work, so that finally each subtraction is checked by a mental addition, each column that has been added in one direction is checked by adding in another, and so

on, all as a matter of course. The teacher will probably not have time for careful scrutiny of all such written work but when such scrutiny is carried out, the aim should be largely diagnostic – to trace the source of errors and not just the errors themselves.

Revision

A change of class, particularly when it involves a change of teacher, offers a fresh start to pupils who have been finding the work difficult. If the opening weeks in the new environment are spent solely on the revision of the material and processes of the previous year, the opportunities provided by the change are not being grasped. Such consolidation is of course necessary, but it should follow, or proceed side by side with, the introduction of something fresh and interesting.

Oral Work

The importance of oral drill – which should always be carefully planned – as a means of maintaining speed and accuracy in the four rules cannot be over-emphasised; in almost every lesson some time should be spent on this. Simple 'mental' exercises, at times with written answers, are also invaluable as a means of revising earlier processes. They have the further value that they eliminate one of the difficulties in problem work – that of comprehending the written word.

PRIMARY 1, 2 and 3

Since the first year of a child's life in school should primarily be one of preparation, through experience, for the more systematised work which will follow, it is undesirable to separate subjects too definitely during this time; they have too much in common to be apprehended separately. The child has, first and foremost, to learn to live in his new environment, meeting a whole range of varied experiences, and continuing to learn in the way which is natural for his stage of development.

The pre-school life of the normal child of five has been one of doing, and in the course of his growth he has accumulated a large stock of ideas, including some rudimentary notions of number. He may have some knowledge of the number names in sequence (rote counting), he may be able to count 3 or 4 or more objects, and he will probably understand a few adjectives which indicate distance (long, short), shape (round, square), size (large, small), and weight (heavy, light). It is important that some investigation should be

made of the number knowledge of the new entrants, and cognisance taken of it in planning their work in Primary 1.

The school environment which the child now enters should stimulate further his interest in number, by presenting situations which suggest and involve counting and calculation. A few of the every-day situations which it is possible to use are implied in the list of daily records suggested on page 57. It is only in an environment where such real situations occur that a child sees the point of increasing his knowledge and skill, and it is when he sees the point of acquiring skill in a subject that he makes the self-effort which is worth hours of imposed labour.

It follows that at each stage of the teaching of Arithmetic the classroom should contain the materials and provide the situations which give reality to the subject. Practical familiarity with any process should precede and give meaning to the manipulation of figures which will be required to establish mastery of the process. Instead, too often the child's early training consists of practice in the manipulation of figures, and in the memorisation of facts, which mean little if anything to him.

Number activities should therefore result in an accumulation of experience, through both free and directed use of varied materials, and participation in situations involving counting and simple calculations. This early experience, if it is to be of full value, must be carefully planned, since the content of the subject is definite and must be taught in a definite order. Ideas must be clarified through experience in a variety of situations, and be fixed and made precise through systematic practice. It is of the utmost importance that each child should fully understand one process before another is introduced, but drill work in the old process should continue side by side with the investigation of the new.

Content

While the learning process is a continuous one the content of Arithmetic teaching falls naturally into three stages as indicated on pages 55 – 63 and it is essential that each child's mastery of one stage should be established before he proceeds to the next stage, in order that the stimulus of success and that of steady progress may be ensured. It is impossible to indicate with any degree of definiteness the time which will be required to establish each stage. Normally the three stages should be covered in a total of three school years, but the foundation work of Stage I is so important that this stage may occupy a longer time than Stage II or Stage III. It might be assumed that when the average child leaves Primary 3 he will:

(*a*) be able to count to 100 (and beyond) singly and in groups;
(*b*) be thoroughly familiar with the notation of hundreds, tens and units;
(*c*) comprehend the connexion between 4 + 7, 14 +7 , 24 + 7, etc., that is, extended addition up to 89 + 9;
(*d*) have become familiar in practical work with all aspects of addition and subtraction situations;
(*e*) have memorised all the basic addition and subtraction facts (100 of each); c.f. Stage II;
(*f*) be able to carry out written operations involving three addends – the total of the sum being under 1,000;
(*g*) be able to carry out written work in subtraction, involving hundreds, tens and units;
(*h*) understand the multiplication process and have begun to build up some of the multiplication tables;
(*i*) have used, and become familiar with, the following: pounds and ounces; yards, feet and inches; quarts and pints; coins to 2/6 and 10/- note; the calendar and clock times important in the child's routine.

Written work in connexion with (*i*) should be excluded, except in so far as the children make records of their practical work.

It must be emphasised that this level of achievement is an expectation for the average child. In a subject in which individual differences are so marked as they are in Arithmetic, much of the teaching must of necessity be on group or even on individual lines; even with this there will still be some children leaving Primary 3 who have progressed beyond the point indicated above, and others who have not attained this level.

General Experience

While directed experience, clear teaching and systematic practice are an indispensable part of the teaching of Arithmetic, and must keep pace with the children's growth and development at all stages, it should also be realised that essential number experience is gained by the children through free use of materials and in such activities as stories, rhymes, finger plays and singing games. It is therefore desirable that the school should be provided with some or all of the materials mentioned below in order that the children, when they come to school, may continue to learn during part of their day in the way which is most natural to them.

It is not possible to suggest stages at which these materials will be used in a particular way, nor to measure the amount of knowledge

which the children will gain through their use. While specific apparatus will be used for direct teaching (see, for example, *Teaching Apparatus*, page 56), the free use of materials will give opportunities for incidental experience in counting, in assessing quantities, and in the use of arithmetical language in real situations. Such experience is a necessary basis for formal teaching.

Materials for General Experience

Sand; water; clay; building blocks; paint, pastels, pencils etc.; wood, hammers and nails etc.; scrap materials and joining materials (e.g., glue, clips, elastic bands, needle and thread etc.); inter-locking building materials.

House corner; dressing-up box; shop, miniature figures (e.g., family, farm, ships and vehicles).

Posting box; large beads; peg boards; sorting boxes; mosaic tiles; jig-saw puzzles; inset boards; picture and colour-matching material.

Pictures – large and small; books.

Skittles; quoits; number arches; tiddlywinks; simple race games; snakes and ladders; number lotto.

STAGE I

Content

Counting actual objects to 10.

Recognition of the symbols up to 10 and operations involving numbers up to 10, including written statements.

Learning the number names in sequence to 100 (rote counting).

In order to work with confidence within this range the child must:

(*a*) be able to recite the number names in proper sequence;

(*b*) be able to discriminate the objects being counted (i.e., deal with them one at a time) making a perfect one to one correspondence;

(*c*) realise that the last number name applies to the group as a whole;

(*d*) associate the symbol with the appropriate group, the link being made firm by varied illustration and application;

(*e*) be able to write the symbols 1 to 10;

(*f*) understand from directed experience with varied material the composition of the numbers to 10 and the recording of these operations in the conventional manner with the +, —, and = signs: he should begin to realise that the total is independent of the order of addition;

(*g*) be able to add any two numbers of which the sum is 10 or less and to record the operation, preferably in vertical form: counting objects, if needed, should be arranged in the pattern of the Number Indicator (see below) and the total arrived at by 'counting forward' from the bottom group;

(*h*) be able to subtract up to 10 — 9 using concrete aids, record the operation, and have some understanding of the connexion between the corresponding addition and subtraction combinations within that range.

Notes: 1. There is considerable danger in introducing (*e*), the writing of symbols by the child, before the child has thoroughly mastered the conceptions outlined in (*b*) to (*d*). The time necessarily devoted to this 'pre-writing stage' will, of course, vary from child to child.

2. The ordinals – first, second, third, etc. – should gradually be made familiar through incidental use.

Apparatus

Teaching Apparatus

Number Indicator having for each number a pattern of spots or squares, plane or in relief; the figure; a group of small objects – all the same, e.g., beads or spools.

Note: The grouping in the patterns should be one in which the pattern for each number can be obtained from that of the preceding number by the addition of a counter without rearrangement, e.g., an arrangement in 2's.

Board with set of detachable digit cards, 1 to 10.

Ball frame.

Bead bars.

Counting rods.

30-bead string (large beads) for wall suspension.

Home-made apparatus presenting reels, clothes pegs, etc., in sets of 10.

Figure Flash Cards 1 to 10.

Wooden numerals 1 to 10.

Graded sum cards.

Note: The selection of manufactured number apparatus should be both careful and critical. Only such apparatus should be chosen as will establish clear concepts and have a definite place in a well considered and logically graded scheme of teaching.

Counting Materials

Small containers.
Wooden blocks.
Bobbins and reels.
Sticks.
Large beads.
Shells.
Nuts and cones.
Clothes pegs.
Peg boards, etc.

Teaching

Number Sequence

(*a*) Through rhymes, songs and stories;
(*b*) through rote counting.

Counting for daily records

Calendar.
Number of children present.
Number of children for Milk and Meals.
Birthday chart.
Weather record.

Counting with small apparatus in conjunction with Number Indicator

(*a*) *Under the teacher's direct guidance*

Counting groups of objects, ten or fewer.

Arranging numbers of objects, ten or fewer, in the patterns which correspond with those used on the Number Indicator.

Associating patterns with their group names, by identifying groups named by the teacher, and by arranging groups named by the teacher.

Introduction of figures to correspond with group patterns and names.

Practice in making figures (the correct formation should be insisted upon from the beginning).

(*b*) *Individual work*

Threading beads in groups, ten or fewer, in association with digit cards; building towers of bricks, ten or fewer, in association with digit cards; using sorting boxes in association with digit cards; matching dominoes; using small replica of Number Indicator; etc.

Composition of Numbers to 10

Through practical work under teacher's direct guidance, using counters, pegs, spools, etc.; operations to be recorded by the teacher.

Addition and Subtraction Sums involving numbers to 10

(*a*) Individual work using matching cards which present the sum and answer separately; digit tablets may also be used for answers; counters should be used if required; the more difficult combinations will require more practice.

(*b*) Individual work, examples being copied by the children from graded cards or from the blackboard; counters should be used if required and results recorded by the children; gradation is essential. Again the more difficult combinations will require more practice.

STAGE II

It is of the utmost importance that the school should continue to provide real life situations in which a call is made upon the children's arithmetical skill. These situations, and the types of material provided, must be adapted to the growing resources and increasing skill of the children. For example, a 'Junior Hack-saw' may be added to the woodwork box, a pint measure to the water tray and miniature toys, shells, etc., to the sand tray; a very simple form of shop may also be introduced. Building materials, jig-saw puzzles, peg boards and number games should be more complex than those used in Stage I. Many of these activities will stimulate and foster the desire for co-operative effort, which now begins to show, and give scope for the children's growing interest in pattern and arrangement. At this stage it should be borne in mind that the growth of ability to concentrate and persevere is a more reliable indication of progress than the perfection of the result, as judged by adult standards.

Work of this kind provides the teacher with valuable opportunities of extending the children's number vocabulary through both planned and incidental discussion of their self-chosen tasks.

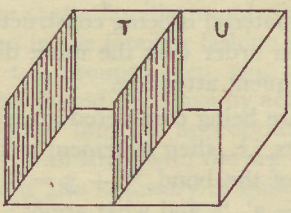
When they discover for themselves that a knowledge of the addition and subtraction facts is a clear advantage to the 'shopkeeper' and 'customer', and to the players in all games which involve scoring, the children are likely to see the point of memorising these facts, and to undertake more readily the necessary systematic practice work which is carried on during Stage II.

Content

Continued practice in the skills established in Stage I.
Rote counting backwards in sequence from 20, naming the number preceding any given number in the range 2 to 100; counting objects to 40 singly, in 2's, 5's and 10's.
Systematic teaching of all the basic addition and subtraction facts, including written statements. (*Complete* mastery of these facts may not be achieved by the end of Stage II).
Notation and place value (tens and units).
Extended addition to a total of 19.
Addition with carrying – column totals not to exceed 19.

Additional Apparatus

100-bead string for wall suspension.
Notation box, with compartments for tens and units.
Horizontal wall strip showing the numbers 1 to 30 equally spaced, with the 10's specially distinguished, together with coloured strips of ten divisions and separate strips for each of the numbers 1 to 9, all with the same spacing. (See page 62.)
Chart showing the numbers 1 to 100 in ten rows of ten.
Graded sum cards.



Teaching

Practical Work

Practical work involving addition and subtraction, as varied as possible in both situation and material, the goal being the immediate recognition of the process necessary, whatever the medium or situation. For example, questions such as the following have to be dealt with practically often enough for their connexion with subtraction to be properly apprehended: 'How many more than . . . . ?', 'How many less than . . . . ?'. 'How many must be added to this to make that?', 'How many must be taken from this to leave that?'.

Counting

Practice in rote counting.

Counting objects to 40, using a variety of materials; counting for daily records (e.g., number of children present) can be done in groups in several ways.

Addition and Subtraction Facts

The basic addition facts are the sums of pairs of numbers up to $9 + 9$. Reversals, though mathematically identical, constitute separate teaching facts (i.e., $6 + 3 = 9$, and $3 + 6 = 9$ both require to be taught). It is also necessary to include the zero combinations (e.g., $6 + 0 = 6$) and their reversals, bringing the total of facts to one hundred.

There is as yet no conclusive evidence with regard to the most effective method of memorising these facts. It should be borne in mind that the ultimate aim is that the children should be able to recall each combination as an independent fact, not only as part of a sequence. Carefully planned oral practice is essential if the desired automatic response is to be achieved.

The approximate order of difficulty of recall of these facts has been established (see *Addition and Subtraction Facts and Processes; Scottish Council for Research in Education*) and this should be borne in mind when practice material is being constructed or purchased and oral work planned, in order that the more difficult combinations may receive more frequent attention.

When these facts are being considered attention should be given to their reverse aspects, i.e., their statement as subtraction facts. For example, discussion of the bond '$5 + 3 = 8$' would also include '$8 - 3 = 5$', '$8 - 5 = 3$', '5 and what are 8?', '3 and what are 8?'.

The treatment of these subtraction facts will depend to some extent on the system of subtraction in use throughout the school. The three standard methods are Decomposition, Equal Additions and Complementary Addition (see *The Teaching of Arithmetic; Scottish Council for Research in Education*). If either of the first two methods is used, there are one hundred facts, when zeros are included, of the type '$11 - 7 = 4$' to be mastered. If Complementary Addition is used, the basic facts required are the addition facts with a changed emphasis, that is, the corresponding fact would be '7 and 4 are 11'. The considerations discussed above in connexion with the earning of the addition facts apply equally here.

Notation and Place Value

The position and notation of the numbers beyond 10 and their relationship with 10 should first be demonstrated by actual grouping, e.g., 17 separate units can be grouped by the children into one bundle of 10 and 7 units to show the connexion with the symbol that is already familiar. This is a more important step forward than is often realised. The demonstration should be carried forward with the aid of such apparatus as

a simple notation box,
bead bars,
the horizontal wall strip referred to above.

Numbers including zero, i.e., 10, 20, 30, etc., will require special treatment, and the difficulty caused by the change in the relationship between the number name and the number structure when 20 is passed must be fully realised, that is, the change from 'nineteen' (units first) to 'twenty-nine' (tens first).

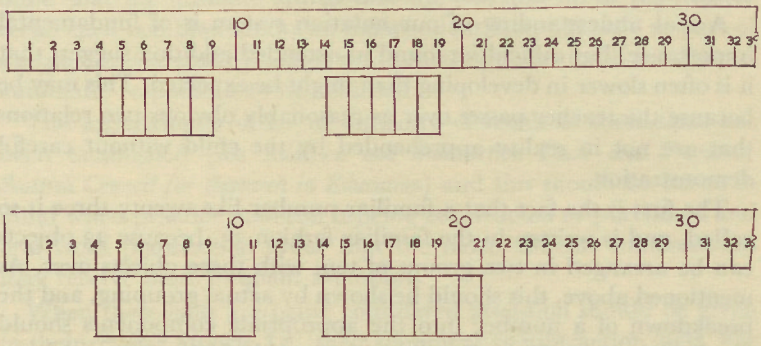
A real understanding of our notation system is of fundamental importance, but difficulties found in extended addition suggest that it is often slower in developing than might be expected. This may be because the teacher passes over as reasonably obvious two relations that are not in reality apprehended by the child without careful demonstration.

The first is the fact that a familiar number like twenty-three is so called, and is written in the familiar fashion 23, because 23 objects can be arranged in two groups of ten, with three objects over. As mentioned above, this should be shown by actual grouping, and the breakdown of a number into the appropriate components should also be shown on the wall strip, with the aid of strips 10 units long. Conversely, practice is also necessary in building up numbers with bundles of ten and single units.

The second fact is again so obvious to the adult that it frequently receives little attention. It is that the whole-number scale consists of an endless series of blocks of ten, all fundamentally the same. The child's apprehension of this is hindered by the circumstance that over the counting range most familiar to him, from 1 to 19, the relationship is obscured by the number names. Failure to grasp the essential structure is shown by many children who know the fundamental addition combinations, but have recourse to finger counting for such sums as $14 + 5$ or $14 + 7$, though if questioned they can pay verbal acknowledgement to the connexions between these sums and $4 + 5$ and $4 + 7$ respectively.

Work with the wall strip on the following lines is helpful. For the pair 14 + 5 a strip 5 units long is used. The child knows that if this is placed to follow the first four spaces on the strip it should end on the 9 mark (see diagram below) and this can be checked. With the similar blocks of ten before him he will normally accept as obvious that if the 5-strip is placed to follow the first four spaces in the second block it will end on the 9 mark there, i.e., that 14 and 5 make 19. Similarly, when in Stage III extended addition has to be carried further, a knowledge of the fact that the 7-strip placed after the first four spaces ends at the 1 mark in the second block leads easily enough to the fact that the 7-strip placed after the first four spaces in the second block ends at the 1 mark in the third, and so on, i.e., that 14 + 7 = 21, 24 + 7 = 31, etc.

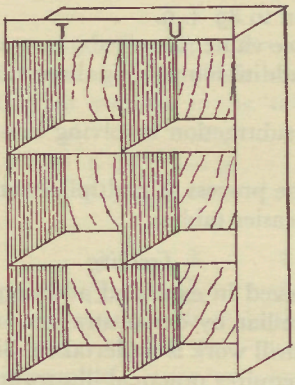
There are indications that this stage of the work needs more time and attention than it normally receives.



Written Addition

The addition of two-figure numbers should be introduced with the aid of a six-section notation box (see diagram on page 63), in which the operations are carried out with bundles of ten and single units; the written statement should be developed at the same time. Early examples should not involve carrying; when carrying is introduced, the children should regroup the units total into a bundle of ten and units, and 'carry' the ten bundle into the tens section, preserving the upward pattern of addition; again the written statement will be developed simultaneously. Enough time should be spent on this

practical work to ensure understanding before proceeding to the drill work necessary for complete mastery.



STAGE III

Provision should be made for practical work which will give opportunity for the application of the children's increasing knowledge and skill. During this stage children are becoming more aware of the part which Arithmetic plays in the affairs of everyday life, and their attitude towards their own achievements with materials during the periods when they can choose their own work is more realistic and critical. They are ready to measure their pieces of wood, and to weigh out the few ingredients required for their simple recipes. They prefer real money, when possible, and real weights and measures in their shopping, and they quickly learn to record the results of their shop transactions. These results should be arrived at practically. Children are able, also, to keep records of their growth and to know each day the number present and absent and the number of bottles of milk used, etc. They begin to notice the passage of time as shown by the clock and calendar.

Activities of this kind keep alive the children's natural interest in, and zest for, number and the effort which they exert to achieve accuracy is an invaluable aid to progress.

Short-lived centres of interest both inside and outside the classroom may arise spontaneously during this stage. If the teacher treats them wisely and avoids prolonging them after the impetus has ceased to come from the children, then arithmetical terms can be learned in real situations and the children can meet real problems which stimulate thought and which need more than the mere manipulation of figures for their solution.

Content

Continued practice in the skills established in Stage II.
Consolidation of the basic addition and subtraction facts.
Extended addition to 89 + 9.
Notation and place value (hundreds, tens and units).
Written work in addition involving three addends, the total being under 1,000.
Written work in subtraction involving hundreds, tens and units and 'carrying'.
Introduction of the process of multiplication and the building up of some of the easier tables.

Teaching

The technique involved in extended addition over this new range should be made familiar by demonstration, on the lines suggested in Stage II, before drill work is undertaken. Similarly the extension of notation to 100 requires practical illustration.

All the skills involved in written addition, namely a knowledge of all the number combinations, extended addition and carrying, can be practised in sums of three addends. Extra addends present no further technical difficulties, but merely demand a greater span of attention and memory; therefore nothing is gained by increasing the number of addends too soon.

The three standard methods of subtraction

(*a*) Decomposition,
(*b*) Equal Additions,
(*c*) Complementary Addition,

have been referred to in Stage II. Research into the relative merits of these methods has established that in general the first is the slowest and least accurate. Its use is not recommended. Method (*c*) is somewhat superior to (*b*) in speed, but this is not sufficient to outweigh the slight superiority of Method (*b*) in accuracy. Method (*b*) is in almost universal use in Northern Ireland, though a wrong verbal accompaniment is often taught. In this method the adjustment necessary when the units figure in the lower line is greater than that in the upper is secured by adding 10 to the units in the upper line and a compensating single ten to the lower line (tens column) so as to leave the difference between the two lines unaltered, i.e.,

T.	U.		T.	U.
5	1	is treated as	5	11
—1	7		—2	7

The final verbal accompaniment should be

'7 from 11, 4; 2 from 5, 3'.

This final form should be achieved as quickly as possible. (Any verbal accompaniment in the early stages should refer to the device that is in fact used – e.g., 10 units to the top line, one ten to the bottom line.)

Preliminary work on multiplication tables is appropriate at this stage. Some of the simpler tables should be developed, either from group counting, leading for example to the 'table of two's':

$$\begin{aligned} 2 &= 2 \\ 2 + 2 &= 4 \\ 2 + 2 + 2 &= 6 \end{aligned}$$

or thus

1	2	3	4
1	2	3	4
2	4	6	8

leading to the 'two times table'.

The aim at this stage should not be the systematic mastery of the table facts, but rather the recording by the pupils of such tables as are built up and the use of these tabulated facts in practical multiplication situations, and the investigation of the peculiarities of the tables and the relationships between them. For example, the table of two's can be produced by ringing every second figure on a number chart, the table of fours by selecting every other number of those already ringed.

PRIMARY 4 to 7

Although from Primary 4 onwards written work begins to play a dominant part in the Arithmetic, there should be no abrupt change of method at the end of Primary 3. In particular, throughout the primary school, the subject needs to be kept in close touch with practical problems within the comprehension and interests of the children. In few subjects are individual differences so marked or of such importance to the teacher as in Arithmetic but, broadly speaking, children may be divided into two groups, those who find satisfaction in the handling of problems of an abstract type and in the mastery of the technique they call for, and those who do not. For the second and larger group, practical work bearing on everyday situations is essential, as it is the only aspect that has, for them, significance and purpose. The first group, while their manipulative skill may be developed beyond that needed for their practical interests, still need the practical work to keep their calculations in touch with reality and to help them to apply the touchstone of

common sense to their results. There is the further point, that well planned practical work can involve a number of considerations that are of importance in everyday life but which do not arise in the text-book problem, with its clear-cut data and requirements. These considerations include the formulation of the problem, the selection and collection of the necessary data, and possibly the consideration of the validity of the data, and the check of actuality on the accuracy of the result. Absurd answers to problems may be accepted uncritically by either group, and this tendency should be checked both by discussion and by practical work in which the answer can be verified, or must be within known limits.

The treatment of a new process should normally fall into three stages:

(*a*) practical and oral work, with very simple quantities, to arouse interest in and give meaning to the process – it is particularly important that this experience should be sufficiently wide and thorough for all the aspects of the process to become familiar; c.f. the note on division in *Teaching* in Stage V;

(*b*) drill work to establish the technique needed for more difficult quantities;

(*c*) the application of the technique to problems and practical work.

The two weaknesses in treatment most frequently manifest are excessive time spent on (*b*) and the failure to apply the acquired technique to anything beyond text-book problems. Time spent on drill can be minimised by the following expedients:

(*a*) Eliminating unnecessary writing; for example, a practice card on addition can be so arranged that the answers are written directly on the paper without transcribing the addends.

(*b*) Analysing and practising separately the skills involved in the process; for example the short division of 267 by 4 involves the appropriate placement of 26 in the 4 times table, and finding the difference between the multiple of 4 selected and 26. The mastering of the complete process can be expedited by preliminary practice in the two skills illustrated here.

(*c*) Careful grading of early examples, so that difficulties are met with one at a time. Thus in short division by 4 a possible order of difficulty would be as follows:

$28 \div 4$ Within tables, no remainder
$84 \div 4$ Outside tables, each digit divisible by 4
$27 \div 4$ Within tables, with remainder, etc.

With increasing age the gap in proficiency between the most and

least able increases. Group and individual methods therefore become more and more necessary as time goes on.

The study of shape and form involved in the earlier stages should not be discontinued as more formal work increases. Mechanical aids are gradually making skill in elaborate computation of little value, but the properties of space retain their interest and importance, and the scant attention they normally receive after the practical work of the young children and before the Geometry of the post-primary school is unfortunate. Such basic ideas as shape, symmetry, size and position are important to Junior School children and can be developed with them in an interesting and practical manner. Of course, there is no place here for the rigours of formal Geometry, but pupils who will have to undergo these later on should have a sound basis on which to build. Some suggestions on suitable work of this nature are given in a later section.

As in the section dealing with Primary 1, 2 and 3, the content of the course has been broken down into stages. Each stage represents roughly a year's work for an average pupil, but it must be emphasised that slower pupils may need more than a year for each stage, and that older pupils may well cover the four stages in less than four years. The teacher should see that each individual progresses at his own best pace, bearing in mind that each process should be thoroughly understood (though further drill in application may still be necessary) before a new one is introduced.

STAGE IV

Content

Numeration and notation up to and including four figures.

The building up of the remaining multiplication tables, and the committing to memory of all the multiplication facts.

Further practice in the addition and subtraction of numbers, and simple written work on the addition and subtraction of shillings and pence, yards and feet, feet and inches, developed from the practical work already done in Primary 1, 2 and 3.

Short multiplication (excludin shillings and pence, etc.).

Teaching

The list above refers mainly to processes which have to be taught. The general approach to be adopted is fully discussed in the preface to this section (see page 65).

The development and mastering of the multiplication tables should be spread over a considerable period in which other topics are also receiving attention. The order of treatment will be that of

increasing difficulty, rather than that of numerical sequence, and applications must be sought that keep revised the tables already dealt with. Many of the principles given in the discussion of the mastery of addition and subtraction facts apply equally here, including the need for attention to the zero facts. Short multiplication, with the table available for reference, affords intensive practice, and when once the equivalence of 3×4 and 4×3 has been established examples such as 243×9 can give practice in the earlier tables, before the nine times table is dealt with. It is not recommended that the multiplication table be taught 'with pence' (e.g. $7 \times 8 = 56$ pence, 4s. 8d.) either here or at a later stage. (See *Teaching* in Stage V.)

Although the written work in Stage IV will be simple, it is not too early to lay stress on order and neatness. Good clear figures and careful alignment are necessary for reliable working, and a sensible setting out, with quantities labelled, is a helpful preliminary to the exercises in exact and logical statement that problems will present at a later stage.

STAGE V

Content

Consolidation of previous work in numeration and notation.
Reading and recording clock times.
Short division.
Long multiplication by two-figure numbers.
Addition, subtraction and short multiplication of length (yards and feet, feet and inches), capacity (gallons and quarts, quarts and pints) and of pounds, shillings and pence, preceded by oral exercises on conversion from one unit to another within these tables.
Meaning of simple fractions (halves, thirds, quarters, eighths).
Towards the end of the year long division should be introduced.

Teaching

When dealing with division the teacher (but not, of course, the class) must have clearly in mind the distinction between sharing and grouping, and both aspects must be introduced practically. Such situations as the following should be dealt with practically so often that they are recognised immediately as involving division:

Share 20 sweets equally among 5 people. (Sharing.) How many each?
Put 20 sweets into bags, five into each. (Grouping.) How many bags?

How many times can I give away 5 sweets if I have 20 to start with?

How many jugs each holding 5 pints are needed to fill a pail that can hold 20 pints?

Lack of this experience leads to difficulties in problem work later on.

Preliminary work on short division will include the inverse use of the multiplication facts ($7 \times ? = 28$), practice of the sort $3 \times 6 + 2 = ?$ and practice in fitting a given number after the correct term in a multiplication table. Short division is best thought of as sharing, i.e., in 2)32 the three ten-bundles have to be shared between two people, giving one ten-bundle each and one ten over, and so on. The quotient may be placed above or below the dividend; correct alignment is important. The simplest verbal accompaniment to, say, $\underset{47,\ \text{Rem. } 6}{7)\overline{335}}$ is '7 4's are 28 and 5, 33, 7 7's are 49 and 6, 55,' and this is easily mastered at this stage even if it is not the standard phraseology for subtraction. Writing the remainder in the form +6 is open to objection. In division by factors the true remainder is arrived at most easily if the division is thought of as grouping, but this method of division presents such difficulties, and is of such limited utility, that its use is not recommended.

Long multiplication can be developed in this order: multiplication by 10, by small multiples of 10, and then by such a number as 25, considered as multiplication by 5 and 20, or vice versa. In Northern Ireland it is customary to begin with the right hand digit.

Conversion, that is, the change to a larger or a smaller unit, is of such importance throughout the remainder of the course that its early stages with the various tables deserve very thorough treatment, with concrete illustrations and much simple oral work.

For the conversion of pence to shillings it is sufficient if the pupil knows the values of 20 pence, 30 pence, etc., and the exact multiples of a shilling, 24 pence, 36 pence, etc. On this basis, with sufficient practice, it is possible for him to translate quickly any reasonable sum from pence to shillings and pence.

When adding shillings it is best to deal with the units first and to treat the total of the tens column as so many ten shilling notes. In subtraction the easiest method for, say,

£	s.
5	15
—2	18

is '18 from 20, 2, and 15, 17,' etc. This method is the easiest one to use in all compound subtraction, especially when the conversion factor is large.

Early work on fractions should be practical, and matching and superimposing with suitable material should be used to establish the important principle of the equivalence of fractions and other relationships between them. Fractions of concrete quantities such as pounds and gallons should be investigated.

Examples in long division should be restricted to those in which the first trial figure is the correct one. (See *Teaching*, Stage VI.)

STAGE VI

Content

Numeration and notation of whole numbers.

Long division.

Extension of fractions to include sixths, tenths, twelfths and hundredths.

Decimal notation to two places, including addition and subtraction, and multiplication and division by whole numbers up to ten.

Conversion exercises.

Further practice (oral and written) on addition, subtraction and short multiplication of compound quantities (money, weight, capacity, length) and introduction of short division of these quantities.

Multiplication by factors of pounds, shillings and pence; of yards, feet and inches; and of other compound quantities involving two units only. (The main value of this work lies in its applications to real situations. Excessive mechanical work should be avoided).

Simple examples, mainly oral, on unitary method.

Incidental use of letters to make generalised statements – some children at this stage may be capable of undertaking very simple work on the lines indicated on page 71 for Stage VII.

Teaching

In teaching long division grading of difficulties is particularly important. At first the multiplication table of the divisor should be available, so that attention may be concentrated on the setting out. Divisors such as 21 and 31 should then be used, first with examples in which the first trial figure is correct, then with examples in which it is necessary to proceed to the next lower figure. Divisors such as 29 and 39, treated respectively as 30 and 40, are usually dealt with next, but the fact that if the trial figure is incorrect it is now necessary to try the next *higher* figure introduces an unwelcome complication. It is probably safer to keep to the procedure of selecting the trial figure

by using the first figure only of the divisor, and proceeding if necessary to lower figures until the correct one is obtained, the testing being done mentally.

In fractions the emphasis should still be on the equality of such fractions as $\frac{2}{3}$, $\frac{4}{6}$, and $\frac{8}{12}$, as this is the foundation of the later work in addition and subtraction. Concrete applications should be kept constantly in mind.

Many children are familiar with a cyclometer or speedometer, and either of these affords a very helpful introduction to decimals. Ruler work can be used to familiarise the notation to the first place, on which most of the work of the year should be concentrated, and decimals of concrete quantities should be considered. Hundredths can be illustrated by subdividing a unit square; when the significance of the first place has been properly grasped, the extension to the second should not present any great difficulty, but time can well be spent on such matters as the connexion between 23 hundredths, and 2 tenths and 3 hundredths.

In the simple work on unitary method it is well to bear in mind the form of the setting out which will be adopted in the written work of Stage VII.

STAGE VII

Content

Further work on compound quantities (money, weight, capacity, length).

Long multiplication and long division of money.

Fractions: addition, subtraction, multiplication and division of simple fractions.

Decimals: multiplication and division.

Practical exercises on time, including work with time-tables, with time-sheets and with the calendar.

Calculation of perimeters and areas of rectangular shapes.

Further work on unitary method, leading for the abler pupil to the idea of ratio.

Simple work, mainly oral, in percentages, with emphasis on the equivalent decimals and fractions.

Incidental use of letters to make generalised statements – there should be frequent use of letters to make general statements about some familiar numerical relationship: 3 pence each, 3 shillings a dozen; p pence each, p shillings a dozen.

Teaching

There are several ways of setting out the work in long multiplica-

tion of money, each of which has something to recommend it. One such is as follows:

£	s.	d.	
3	14	3	
		×29	
107	13	3	
20	7	12)87	
87	116	7	Rem. 3
107	29		
	20)413		
	20	Rem. 13	

When one method has been firmly established it is well to encourage children to use their own initiative when the terms of the multiplication suggest a shorter method, e.g., £3 5s. 0d. × 1,000 or £2 16s. 1d. × 20.

Probably the best method of setting out the work in long division is as follows:

£	s.	d.	
2	5	5	Rem. 16d.
17)38	13	5	
34	80	96	
4	93	101	
20	85	85	
80s.	8	16	
	12		
	96d.		

Some teachers prefer not to write the 80s. in the £s column but to put it direct into the shillings column, and similarly with the 96d.

Adequate spacing between columns is essential in both the processes illustrated above.

If the earlier work on the equivalence of fractions has been understood the addition of fractions presents no great difficulty, especially as the lowest common denominator will be obvious. When mixed numbers are involved it is generally better to deal with the whole

numbers first, and not to convert to improper fractions. In subtraction the difficulty exemplified by $3\frac{1}{2} - \frac{3}{4}$ is usually treated by Decomposition, but it can be dealt with by Equal Additions. It is both possible and desirable to make clear the reasoning behind the rules for the multiplication and division of fractions, but once this has been done the processes should be made automatic as soon as possible, and the pupils should not be expected to be able to reproduce the arguments.

The multiplication of decimals is normally carried out in Northern Ireland as follows: the multiplication is done as though only whole numbers were concerned, and the decimal point is put in the answer so that there are so many digits to the right of it as there are altogether to the right of the points in multiplicand and multiplier. Division is in general carried out by making the divisor a whole number. The consensus of opinion seems to be that these methods are at least as satisfactory as any others. Both can be explained and justified with reasonable ease if some preliminary work has been done on multiplying and dividing numbers in decimal notation by 10 and 100.

When the time-table notation 8.25 p.m. has become familiar, there is a good deal to be said for introducing the Continental notation 20.25. Apart from its intrinsic interest, it eliminates the difficulty of passing mid-day.

In unitary method it is wise from the beginning to form the habit of expressing the facts of the question in such a way that the units in which the answer is to be given come at the end of the statement. For example, 'A train running steadily covers 775 ft. in 9 seconds. How far does it go in 7 seconds?'

In 9 seconds it goes 775 feet (as the answer has to be in feet)

In 1 second it goes $\frac{775}{9}$ feet

In 7 seconds it goes $\frac{775 \times 7}{9}$ feet, etc.

Some abler pupils after plenty of practice, come to realise that the 775 feet has to be multiplied by either $\frac{9}{7}$ or $\frac{7}{9}$, and considerations of 'greater or smaller?' will decide between the two, enabling them to omit the second line.

SPATIAL KNOWLEDGE

It is not possible to lay down a course suitable for all schools, and it is not intended that all the topics suggested below should be dealt with. Teachers should select items they think suitable and add others of their own devising, appropriate to local conditions. Some of these

topics are closely connected with handwork, and their treatment may involve little beyond dwelling more specifically than usual on the principles involved. It is not intended that a continuous period of time should be devoted to this type of work, but rather that a thread of it should be maintained throughout the year. Some of these topics are closely connected with practical subjects.

In the early stages of measurement a ruler showing only inches and the $\frac{1}{4}$ in., $\frac{1}{2}$ in. and $\frac{3}{4}$ in. divisions is preferable to one of ordinary type. Graded work cards will prove particularly helpful in a period of practical work.

STAGE IV

Continued experience with shapes in wood or cardboard (squares, equilateral triangles, circles and their halves), including free pattern making, copying given patterns, fitting shapes into inset boards in which several arrangements may be possible. Development from this work of ideas of symmetry.

Measurement of distances and objects in yards and feet or in feet and inches.

STAGE V

Extension of pattern work, with triangles of different shapes and sectors of circle (quarter and sixth).

Indoor and outdoor measurement of sides and diagonals of rectangles.

Measurement in inches and quarters; ruling lines of given length.

Right angles by folding paper and by plumb-line.

STAGE VI

Measurement of perimeters of rectangular shapes.

Areas by counting squares, leading to area of rectangle.

Idea of a perpendicular; parallel lines by drawing equal perpendiculars.

Compass points from folding paper circle.

Angle as a measure of rotation – hands of clock, swinging door, etc.

Copying rectangular shapes; making up simple plans; use of set square.

STAGE VII

Drawing circles with rope, string or compasses; circle patterns.

Scale drawing; models and buried treasure problems – i.e., the solution by scale drawing of problems of the type 'A tree is 20 ft. from a wall. Find the position of a treasure known to be 30 ft. from the tree and 5 ft. from the wall.'

Chapter IV

GEOGRAPHY

GEOGRAPHY is concerned with the inter-action between man and his environment; it therefore involves some study of the scene of man's activities, viz., the earth's surface and atmosphere. It does not, however, require any study of the various elements of this environment except for the purpose of understanding how they affect or are affected by human activities. In the primary school, therefore, the teacher must deal with such topics as the earth's surface, distribution of land and sea, climate, etc., not for their own sake, but only in so far as they affect human life.

Since it is concerned with man's activities the subject matter of Geography is constantly changing. The teacher must bear this in mind and endeavour to keep her information up to date.

Before the children are sufficiently equipped to begin their study of Geography as it is normally understood they must possess the ability to read and comprehend simple text-books and to understand and use simple maps. Experience has shown that with normal children this stage is reached about the age of eight or nine years. This does not imply, however, that no geography will be learned before Primary 5. It is on work done in previous classes, and especially in Primary 4, that the foundations of the child's geographical knowledge are laid, and the manner in which this work is treated is therefore of fundamental importance.

PRIMARY 4

Young children are interested more or less in everything with which they make contact, their curiosity is unbounded, their questions are never-ending. These interests become manifest in various ways; those of which the teacher may make use in furthering the child's geographical training may be summarised thus:

(*a*) *Observing*. This usually takes the form of just standing and watching any process that is going on – particularly men at work. Boys take great interest in mechanical operations, e.g., men driving machinery (bull-dozers, cranes, shunting engines, farm machinery, etc.), roadmenders at work, men building houses or felling trees.

(*b*) *Collecting.* This is not always a sustained activity and varies from child to child. It usually occurs in 'spasms' which correspond with passing interests and depend upon circumstances, but most children delight in making collections of sea shells, rocks and stones, exhibits for the 'nature table', pictures and photographs, etc.

(*c*) *Drawing and modelling.* Children often derive much pleasure from giving expression to their interests through the media of drawing, painting, and modelling in clay, plasticine, paper, cardboard, etc.

(*d*) *Exploring.* This takes the form of wandering beyond their own home district to find out for themselves what there is to be seen farther afield.

(*e*) *Listening to stories.* Stories which usually hold interest for children include animal stories, folk tales and stories of adventure.

The teacher will see at once that there is plenty of scope for modern methods of teaching based upon the child's activity and experience, and the geographer will note how well these characteristic activities of childhood conform to the characteristic methods of the field geographer, viz., observing, recording, selecting and interpreting. Yet it must be added that at this stage it would be unwise to expect anything in the nature of interpretation: the topics selected are studied for their own sake, for the pleasure they give in pursuing a particular interest and also, incidentally, for the information they afford.

Centres of Interest

At this early stage, then, the child receives his geographical training incidentally through the activities involved in studying a series of centres of interest or topics based upon first hand observation mainly in the school locality. The teacher should make sure that the topics chosen are likely to prove fruitful from a geographical point of view. Fortunately, this is not very difficult; almost anything that is happening outside the school which interests the child will serve as a starting point. What is perhaps more important is that the interest should come from the child. The teacher will therefore contrive to bring her pupils into contact with any pre-chosen situation just when something likely to catch their interest is happening, e.g., a visit to the railway station when shunting is taking place. Places where there is usually plenty of activity – railway stations and goods yards, docks and quaysides, building sites, road works, quarries, bridges over rivers, country fairs and markets – interest children, and visits to such places will always provide plenty of 'raw material' for

subsequent conversation, drawing, modelling, etc., and for simple map work as well.

Such visits should also provide the children with the opportunity of learning, by direct questioning, something about the work of the people they see engaged – the shop-keepers, bus and lorry drivers, postmen, builders, etc. From all their investigations the children will gradually begin to form their first notions of the meaning of geographical concepts like 'industry', 'trade', 'transport', 'communications' and, if there is a convenient stream or river nearby, perhaps also 'erosion', 'deposition', 'tide', etc. They will not, of course, be taught definitions, and may not even hear such terms mentioned, but they will be laying down the necessary foundation for a proper understanding of these terms when they meet them later.

Weather Observations

Observation of weather phenomena should also be encouraged, not necessarily for the purpose of keeping a daily record – that can come later, when wind directions, rainfall amounts and temperatures can be noted – but for the purpose of relating weather and seasonal changes with changes in dress and occupations throughout the year, and noting their influence on transport, animal life, vegetation and agricultural activities.

Compass Directions

Experiments with shadows cast by a vertical stick at mid-day are valuable for demonstrating the seasonal variation in the altitude of the sun, and also provide a suitable practical method of introducing the children to compass directions.

Natural Vegetation and Agriculture

It is often said that Geography begins as Nature Study, and there is no doubt that the knowledge gained from making direct observations of plant and animal life, including the collection of specimens of plants, wild flowers, leaves of trees, etc., forms the best possible foundation for later studies involving natural vegetation and agriculture. The effects of altitude, aspect, soils and seasonal changes upon plant life can best be brought home to the child by this means.

Direct observation of farming processes in the different seasons of the year is also of fundamental importance. Country schools clearly have a great advantage over town schools so far as the observation of natural phenomena is concerned. Yet the urban teacher is not entirely without resources in this respect: she can always make use of local parks, gardens and allotments. For study-

ing agricultural processes, however, it would be necessary to organise visits to a farm; and although this would involve some extra trouble for the urban teacher, the benefits to be gained by the children are likely to make it well worth while. Comparatively few town children really understand the meaning of such a universal and fundamental process as ploughing, for instance, because the majority of them have never seen a plough at work. Similarly many town children have never seen cows being milked. It would be difficult to over-emphasise the value to urban children of such visits which, ideally, should be made three or four times, at different seasons of the year, to cover the major farming operations.

Once the pupils have had some acquaintance with agriculture at first hand they are in a position to appreciate photographs of crops, implements and processes in other parts of the country and abroad, because they can then interpret them in the light of their own experience; without that previous experience the pictures will hold little meaning for them.

Stories

Stories have their place in helping to make children aware that there are other parts of the world where conditions of life are vastly different from our own. Such stories must deal with topics and events which have interest for the children, and they must be told or read to the children for their interest *as stories*; i.e., they must be stories containing plots, not just series of disconnected events or lists of geographical facts put together in story form. It is also important that the geographical background to the stories should be authentic. The teacher must therefore choose her stories with discrimination, and adapt them, if necessary, to the age of her pupils. Folk tales, stories about animals the children may have seen – for example about Zoo animals in their natural surroundings – stories of adventure and episodes from first-hand accounts of travellers are all sources from which the teacher may select and adapt suitable stories.

Mapwork

At some period in Primary 4 the need for maps will probably make itself felt. It may arise in many different ways – perhaps for a map to show where the individual members of the class live, or the route by which the goods sold in the local greengrocer's shop come from the market. The time to introduce map work is when this demand arises naturally, and the best way is by encouraging children to make maps for themselves. The first maps should be maps or plans of what they can see at the time, e.g., maps of the classroom to show

the way the children go to their seats, or to show the position of the radiators, etc., followed at a later stage by maps to show the way to the classroom from the school gate, the way from the school to the local post office, railway station or bus stop. If the area represented by the map is thus gradually increased and the pupils are always required to draw their maps on sheets of a uniform size, they will readily grasp the notion of scale, although the demand for accurate drawing to a pre-determined scale will not arise until later.

When the children are able to make a reasonable attempt at showing the lay-out of the local roads they should be introduced to their first real map – a large scale (25 in. to one mile) Ordnance Survey map of the immediate area. Sufficient copies of this map should be available to permit of study by small groups. The children will be quite capable of understanding the map, and will delight in identifying their own homes and in locating and recognising the local landmarks, buildings and roads which they know so well. Air photographs of the locality, if obtainable, are valuable in helping to further this end.

From this point onwards all field work should be done by the children with the aid of simplified maps of the locality based on the Ordnance Survey map. From using these maps the pupils will soon realise the use of the cardinal points (which they may previously have found by experiments with shadows cast by the sun) and the importance of orientating the map correctly. They will also learn the significance of the symbols used, and realise that there is much that the map does not show, the smaller the scale the greater being the degree of simplification.

As the need for the representation of a larger area is felt the scale of the maps made available to the children can be reduced. Thus the children should become familiar with first the 25 in., then the 6 in., the 1 in. and, later, the $\frac{1}{2}$ in. and $\frac{1}{4}$ in. to one mile maps of the area containing the school, but they should be produced only as the need for them arises, i.e., for a specific purpose. From the $\frac{1}{4}$ in. map, which shows most of Northern Ireland, it is but a short step to the wall map of Ireland (physical), but it is most important that the children should be properly prepared, through becoming familiar with the larger scale maps of known areas, before being introduced to their first wall map with its extreme over-simplification.

The progress from their first efforts at drawing free-hand maps to this stage will normally take the children *at least* two terms, and whether the wall map can be introduced much before the end of Primary 4 will therefore depend upon the time when the children first feel the need for expressing their knowledge of the locality in

map form. No definite time for this can be laid down. It is unwise to start the children on map work before they are ready for it, and in some cases therefore it may not be possible to introduce the wall map before Primary 5. If map work is begun by Christmas in Primary 4 the children should be ready for the wall map by the summer, when the possibility that some of them may travel to other parts of Ireland for holidays may create a need for its introduction.

Attainments

By the end of Primary 4 then, the children, without having made any systematic study of Geography as a subject, should have received a useful preliminary geographical training in keeping with their interests and abilities. They will have received this incidentally, through their investigation of topics which are interesting in themselves by methods which are educationally and geographically sound, mainly practical activities based on observations in the field. During this period they should have acquired, at first hand, a good knowledge of the simple geography of their home district, both physical and human, and an understanding of some elementary geographical terms and principles. Through their local map work and collections of pictures and photographs of the home area they should have built up a body of experience which will later lead them to a fuller understanding of similar maps and photographs relating to other areas. They should also have had practice in recording their observations and expressing their knowledge in the form of drawings, models and simple maps as well as in the writing of simple statements and descriptions. From the stories they have heard the pupils should have realised that there are many lands which are quite different from ours, and also different from one another, that there are great mountains and plains, deserts and forests, oceans and ice-fields about which they have more to learn; they should have gained the impression that the world is a wonderful and exciting place, and will have had their curiosity stimulated accordingly.

PRIMARY 5 to 7

There is no sudden change in the nature of the geographical work undertaken when the children pass from Primary 4 to Primary 5; the work of the next three years should be simply a gradual and continuous development of that already done.

As they gain experience the pupils become more and more interested in conditions of life in other parts of the world. At the same time they develop the ability to imagine such conditions with

greater accuracy. Full advantage of this should be taken by the employment of methods which involve the use of pictorial illustration.* Their delight in making collections of objects, in drawing and painting, in making models and in 'exploring' continues unabated, and as they become more capable and experienced they carry out these activities with greater efficiency. Their ability to read and understand simple text-books may now be assumed, and this opens up the prospect of individual 'research' or 'library' methods. Thus both the content of the course and the variety of teaching methods that can usefully be employed are increasing in scope. The teacher should make sure that her methods are varied, and remember that the success of her work will depend to a large extent upon her skill in choosing methods which are appropriate to the subject matter in hand.

Before considering how the Geography course might be arranged during these three years it would be as well to have clearly in mind the type of knowledge or attainment in the subject which can reasonably be expected at the end of Primary 7. It will be evident that as schools and their localities and teachers differ widely from one another it is not possible to lay down a definite list of facts which should be known, principles which should be understood and degrees of proficiency with which various geographical skills should have been mastered; it is only feasible to indicate the *sort* of attainment one might expect:

(*a*) *Local Geography*

A fairly detailed first-hand knowledge of the geography of the school locality – say the area within easy walking distance of the school – its topography, weather characteristics, mineral resources (if any), agricultural products, industries and other occupations, its communications, and an idea of its setting and relationships with the remainder of Northern Ireland.

(*b*) *Ireland*

The children should be quite familiar with the shape of Ireland and know the distribution of the main areas of high land, rivers, lakes and valleys, sea loughs, etc., together with their names; agricultural methods and products and the farming areas concerned; fishing activities; the chief manufacturing industries and their centres; the principal towns and their location and the main railway

* For suggestions concerning the technique and method of using pictures see appendix, page 199.

routes.* In this work Northern Ireland should be treated in greater detail than the Republic.

(c) British Isles

The pupils should have a clear idea of the 'lay-out' of the British Isles and know the main sea and air routes linking the two main islands and linking the British Isles with the continent of Europe. They should also be able to locate on a map the broad topographical divisions, e.g., the Highlands of Scotland, East Anglia, the Midlands,* and should have some idea of the diversity of life and work through having studied a selection of type areas and their characteristic occupations, e.g., the miners of South Wales, the textile workers of Lancashire and Yorkshire, the fishermen of the East Coast, the farmers of East Anglia.

(d) World Geography

The relative positions and shapes of the main land and sea masses with the names and positions of the principal countries and seas; the names and positions of the great mountainous areas, plains, river systems, deserts, forests, grasslands, etc., and of the major cities of international importance; the chief trade routes between the British Isles and the sources of some of the important commodities imported into the British Isles; some factual knowledge of certain parts of the world that the children have studied in connexion with their projects or topics – e.g., the Prairies of Canada, as a result of their investigations concerning 'Bread' or 'The Local Baker's Shop'. In general, any knowledge in this category will be of the nature of 'background' knowledge; it may be quite detailed and intimate, but it will not be systematised. For example, in the case quoted above, the children may have studied, perhaps with the aid of personal letters, photographs, etc., the life of a prairie farmer and his family throughout the year. Through this they will have learned something of the nature of the landscape, crops grown, farming methods, effects of climate, transport and communications; they will *not* have studied the Prairies under the headings: position, relief and drainage, climate, agriculture, etc.

(e) 'Tool' Knowledge

The children should have developed some ability to understand and use large scale maps of their local area, the maps in a suitable atlas and the globe. This implies that they should know the purpose

* All this information is not, of course, taught as such, but should be acquired incidentally by the children during their work on topics or 'centres of interest'.

of latitude and longitude and be able to make use of their knowledge. They should be aware of the main limitations of atlas maps arising from the representation of a curved surface on the flat. They should also be able to understand and draw simple diagrams as a means of expressing their geographical knowledge.

(*f*) *Vocabulary*

During their primary school course the children should have become familiar with many of the geographical terms most commonly used; some of these are, of course, not confined to Geography. Examples are: island, lake, river, valley, gorge, tributary, delta, estuary, plateau, pass, summit, port, harbour, import, export, packet station, equator, pole.

(*g*) *Standards of Comparison*

It is essential that the pupils should have gained, through their practical work in the school locality, some accurate conceptions of measurement of distances and heights, areas, temperatures, rainfall amounts and wind velocities. They should know, for instance, the length of a mile through having walked it, and what area of their locality is equal to one square mile; what temperatures of, say, 40°F and 70°F feel like; how much rain is represented by a fall of one inch, through having measured the fall on any particular rainy day, or even during a particularly heavy thunder shower. The possession of such standards can be of great value in helping the children to imagine accurately conditions of which they have had no direct experience.

Although these 'attainments' are set out under separate headings the work could not, of course, be organised in that manner; much of the knowledge listed under (*e*), (*f*) and (*g*) is acquired incidentally by the children during their work in the local area, on Ireland, the remainder of the British Isles and in the course of their World studies. The local area is not treated as a regional study on its own, to be completed before anything else is attempted, but forms the starting off point or 'base of operations', as it were, from which a great part of the studies under (*b*), (*c*) and (*d*) will develop; some work in the locality may therefore be going on at times throughout the whole period. Studies on a world basis may also be undertaken simultaneously with, and not after, Ireland or the British Isles. In fact, there is a very strong reason for making some study of, say, voyages of discovery or modern journeys to different parts of the world as early as possible in the course, first as a means of introducing the children to the wall map of the world, i.e., giving them some

idea of the relative positions and sizes of the continents, oceans, etc., and leading them to realise the setting of Ireland and the British Isles in relation to them; and secondly as a preparation for the introduction of the globe and the use of atlas maps. On the other hand, the elementary study of Ireland which is made falls naturally into place as a development of the local studies carried out in Primary 4, and that of the British Isles as a development of the studies on Ireland.

Local and World studies may therefore be expected to continue simultaneously, although not necessarily without breaks, throughout the three years, but the studies of Ireland should come before those of the remainder of the British Isles. Whether 'Ireland' should be taken right from the beginning of Primary 5 or not, and whether 'The British Isles' should be started before Primary 6 or carried to the end of Primary 7 must depend upon circumstances in the school; only the teacher is in a position to make such decisions and, in fact, she may not be able to reach the same conclusion every year as she will have to be guided by the previous attainments of her pupils, their general level of ability and their interests at the time.

The teaching methods employed must also depend on the teacher – her own preferences and capabilities – on the facilities and equipment at her disposal, on the situation of the school and on its organisation. It is to be expected that the formal type of lesson will become more frequent as the children grow older, but at any stage of their school careers it remains true that methods which make for a good deal of activity on the part of the children, for the initiation of which they have some responsibility, commend themselves as being educationally sound. Some suggestions with regard to methods and possible lines of approach are made concerning certain important aspects of the child's geographical education. For the sake of convenience these are treated under the headings (*a*), (*b*), (*c*) and (*d*) already used.

(*a*) *Local Geography*

Among the advantages of the local area as a field of study are the facilities it provides for training the children to understand and to use maps, perhaps the most fundamental and certainly the most characteristic skill of the geographer. The most common result of faulty training in map work is the confusion to which it gives rise between the representation and the reality – between the map and the part of the earth's surface or the climate or other features which it represents. If this is to be avoided this training *must* be given where the children can experience the reality *at the same time* as they study

its symbolic representation. It is only thus that they can realise the limitations and drawbacks inherent in maps. Without doubt the best way to start this training is for the children to make their own maps. This has been covered above (Primary 4) so far as street plans are concerned, but there are many other kinds of maps – maps to show relief, vegetation, distribution of population, communications, to name but a few. It is incumbent upon the teacher to arrange for the children to receive their introduction to many of the important types of map – those which they will be likely to use frequently later in their lives – during these three years and, if possible, through the experience of drawing them themselves from their own observations. It is not necessary for the children to draw the outline – road network, field boundaries, etc. – every time they go out to map a new feature; once they have been introduced to the large scale Ordnance Survey map they may thereafter use simplified 'blank' maps of the required area, prepared with the aid of the Ordnance Survey map and duplicated by the teacher.

The simpler types of map such as those which show the distribution of obvious features, e.g., a map to show where a certain crop is being grown, or where the shops are situated, can be taken quite early in the course, but the representation of relief is a much more complicated matter and should be treated in careful stages which should lead, towards the end of Primary 7, to some understanding of contours. It is suggested that relief should always be shown by layering, and not by any obsolete methods (e.g., hill shading, 'caterpillars', or pictorial representations of hills) and that the emphasis throughout the course should be on the layers of colour rather than on the contour lines dividing them.

It has already been stated that the taking of weather observations and keeping of records are useful for the establishment of standards by which children may estimate weather conditions in other parts of the world. They also provide a valuable means of training children in accuracy of observation. From about the beginning of Primary 5 the children are capable of noting wind directions and constructing a simple wind 'rose'; later they should have the opportunity of taking observations of temperature and, at the end of Primary 7, perhaps, also of rainfall. These temperature and rainfall records may serve as material for training in the drawing of graphs and diagrams.

Examples of local studies, and accounts of studies actually carried out with children of various ages, are given in *Geography in the Primary School*, Second Edition, 1953, published by the Geographical Association.

(b) Ireland

The study of the geography of Ireland comes most naturally as an extension of the geography of the local area, and it can conveniently be made through the medium of map work. Ideally, the area under consideration should be progressively enlarged in several stages (say two or three) from the comparatively small school locality to the whole of the Six Counties, and thence to the whole of Ireland, the local area being included in each stage in order that the pupils may gain some conception of its 'place' (i.e., not only its relative position, but also its function and relative importance) with regard to each successive area as well as to Northern Ireland. There are many different ways in which the demand for an extension of the local horizon may arise; for example, investigation of the school's milk supply may call for maps showing 'how the milk gets to the school from the depot', or 'where the creamery gets the milk from', or it may be that investigation of a local stream raises a demand for a map to show 'where the stream comes from', or 'how the water reaches the sea'. Once the area under consideration is too large for the pupils to know all of it at first hand, recourse may be had to pictures and sketch-maps as well as the Ordnance Survey maps.

(c) British Isles

The approach to the studies of other parts of the British Isles should similarly derive from the local area, or perhaps from Northern Ireland. If the school is in a farming district this might be made through a comparison and contrast of local farming practice with that in other parts of the British Isles, but it could equally well arise through a study of the sources of the local fuel supply leading to an investigation of coal mining. It does not matter whether the approach is by way of industry, trade, agriculture or holidays, so long as the link is one of genuine interest on the part of the pupils, as it is this interest which provides the driving force for the investigations. The teacher will also have to bear in mind the necessity for maintaining a balance, i.e., making sure that the areas and occupations chosen are important and representative.

Text-books may be expected to take a prominent place among the sources from which the children will obtain information, and if the pupils are to pursue their investigations by 'library' or 'research' methods – perhaps pooling their findings from time to time – it would seem advisable for the school to be equipped with a few copies

of each of many different text-books, rather than with a copy of one particular text-book for every member of the class.

(d) World Geography

One of the duties of the teacher when the children are in Primary 5 must be to introduce them to the map of the world and to the globe, so that they may be in a position to make intelligent use of an atlas. Opinions differ whether the world map or the globe, or even atlas maps, should come first, but there is no doubt that if misconceptions are to be avoided the children ought to be familiar with the idea of the earth as a gigantic ball, spinning in space, and with the globe as a symbolic representation of this, before they are required to make use of an atlas with its variety of scales and projections. It is, however, a big jump from a map of a comparatively small area like Ireland or the British Isles to the globe, and for this reason many experienced teachers prefer to delay consideration of the earth as a globe until after the children are familiar with a map of the world. Taking the world map first has the merit of postponing work with the globe until the children are a little more developed mentally, without delaying their introduction to the shapes, sizes and relative positions of the main land and sea areas of the world. It also allows the teacher to continue with the method, previously outlined, of progressing from the map of the school locality to that of Ireland by a series of 'extensions' so that the new area is always related to the previous one.

The first 'extension' will naturally be from the map of Ireland to that of the British Isles, showing the relationship between the two main islands, and the succeeding one from the British Isles to the North-West fringe of Europe, showing the relationship between the British Isles and the mainland of the Continent. The teacher will have no difficulty in deciding on her approach to the British Isles and Continent in the light of the children's interests at the time; the routes taken by commodities used in the local area (e.g., flax for the local mill from Belgium, timber from the Baltic, early fruit and vegetables from France, Spain, etc.), by people going on holidays, or by visiting football teams, naval vessels, etc., will serve so far as the Continent of Europe is concerned. For extending the map farther overseas, routes taken by goods that are used in the locality or journeys that are 'in the news', e.g., by members of the Royal Family, M.C.C. Cricket Teams, etc., may be considered. As a development from the stories of exploration and discovery told in Primary 4, the mapping of routes taken by explorers in opening up the world has much to commend it.

Before a globe is used in class, a fair amount of discussion on the size and shape of the earth should take place, in order to induce the children to imagine it as a colossal ball, so big that it is only just possible for us who are on it to 'see' the curvature of its surface. The visual illustration of this – a ship at sea hull down over the horizon – may be drawn on the blackboard, provided the curved surface is shown as 'flat' as possible. Later, a large ball may be used to represent the earth – spinning free – and this should be used to demonstrate the reason for the occurrence of day and night. Once the children realise that the earth always spins in the same direction about an axis which ends at two fixed points on the surface, they will understand the meaning of the terms North Pole and South Pole. The globe can now be introduced as a model which represents the earth. If it can be detached from its stand the rotation can be demonstrated with the axis held in various positions, but if it is a fixture the children must be made to realise that there is not really a 'right way up' to the earth. Longitude and latitude may be explained as North-South lines (connecting the Poles) and East-West lines, respectively, and may be drawn in on the surface of a slate globe. They may also be demonstrated by shining the beam of light from a projector or even from a hand torch on to a pin or a match stick stuck on to the surface of the globe with plasticine: with the globe in the equinox position the shadow of the pin will lie East-West along a line of latitude at 'sunrise' and 'sunset', and North-South along a meridian at 'noon'. This experiment may also be linked with the shadow cast by a stick in the sun at mid-day in the playground, or on a table at the window, to find the compass points. The value of longitude for determining time differences can be demonstrated similarly by using three pins on the same latitude placed at intervals of 90° longitude from one another. The numbering of lines of latitude and longitude may be given to the children simply as matters of fact but their use as a frame of reference for fixing positions on the earth's surface should be clearly understood by the pupils, and they should be given exercises in their use for this purpose.

The work outlined so briefly above can only, of course, be taken very slowly: the teacher should make no attempt to hurry it, but should be guided by her pupils. Much of it will, no doubt, have to be dealt with again and again when the globe is being referred to in the course of world studies. Once the children have reached this stage the globe (preferably a physical globe which also shows political boundaries, important towns, shipping routes, etc.) should be used very frequently at first, so that the children become familiar

with the true shapes and relative sizes of the land and sea masses. Even later, after the atlas is in regular use, the globe should be referred to from time to time as a safeguard against mistaken ideas and, if necessary, a corrective.

When they have become fairly familiar with the map of the world and the globe the children are ready to receive a simple atlas, but they should not be given one before they have at least realised the problem of trying to represent a curved surface on a flat piece of paper. This may be brought home to them by allowing them to try to trace the outline of, say, a continent from the globe. They will readily see that this cannot be done without distortion, and will thus realise that there can be no such thing as a really accurate map. It is not suggested that the pupils should be required to know the characteristics of the various projections, but there is no harm in their knowing the term (in any case they will see it in their atlases) and in knowing its significance. The fact that each projection represents a different method of attempting to solve the problem will explain why different maps of the same area show it in slightly different shapes.

Although no definite period of time can be suggested for this preparatory work on the world map and the globe, in general the children may be expected to reach the stage when they are beginning to use the atlas at about the end of Primary 5 or early in Primary 6. Throughout the remainder of their school careers the atlas and globe should be in constant use.

Some topics suitable for use as world studies have already been mentioned in connexion with the introduction of the world map. In all these, however, the children are mainly concerned with routeways – their attention is constantly 'on the move' as it were, from place to place, and as they grow older the need may be felt for a more continuous study of certain areas. One topic which fulfils this condition, and which usually proves a source of considerable interest to children of about ten years of age and older, is the study of the conditions of life of people in various parts of the world, particularly the more primitive peoples, e.g., the Eskimos, Bedouin Arabs, Kirghiz, Bushmen. These studies should be representative not only of different regions of the world but also of different modes of life – hunting, fishing, herding, farming and combinations of these. It would be a mistake, however, to attempt too many such studies; a superficial treatment is apt to be unreal and lacking in conviction and, through leaving a great many questions unanswered, likely to destroy rather than foster the children's interest. Moreover, this type of work lends itself to individual 'research' or 'library' methods,

coupled with map work, drawing and painting, modelling, etc., and such activities require a generous time allowance. Teachers will, however, see here the opportunity of integrating the subject with Art and Craft, and possibly also with English.

Another suitable topic ('Bread') and a possible method of approach have been suggested above, and it will be obvious that the other main commodities which satisfy man's basic needs offer similar opportunities for discovering interesting facts and information about other parts of the world. At the same time, they provide an introduction, at the child's level, to Economic Geography. For this reason and because such subjects are likely to have more appeal for the older children, it would be as well if they were not used before Primary 7. The teacher will again note the desirability of arranging for the studies undertaken to be representative of different natural regions (e.g., tea – monsoon lands; rubber – equatorial forest; oranges – 'mediterranean' lands; wood-pulp and paper – coniferous forests.). It is not intended that she should attempt to cover these completely, but if a selection of 'Primitive Peoples' has previously been studied, as suggested above, it should be possible to arrange for areas representative of most of the major natural regions to be studied during the last two years of the primary school course.

It should be reiterated that, whatever the approach, the emphasis in these World studies should be on the conditions of life and work of people, and that the children should be allowed to make as intensive and detailed a study as they are capable of, and as the facilities at their disposal will allow. Furthermore, any attempt at generalisation would be a mistake at primary school level.

List of Geographical Equipment

Globes: One 'slate' globe – preferably with continents outlined in white and latitude and longitude lines incised. One physical globe – preferably with political boundaries, important towns and shipping routes also marked.

Wall maps: The following physical wall maps: Ireland, the British Isles, Europe, Africa, Asia, Australia, North America, South America, The World – preferably Mollweide's Projection.

Other maps: 25 in. to 1 mile Ordnance Survey of school district. 6 in. to 1 mile Ordnance Survey of school district. 1 in. to 1 mile Ordnance Survey of school district (Popular Series). $\frac{1}{4}$ in. to 1 mile of Northern Ireland or of the area containing the school district (e.g., sheets 1 or 2 of Bartholomew's Quarter Inch Map of Ireland).

Atlases: A reference atlas. Sets of suitable 'junior' atlases – enough to provide one per child in Primary 5 and above.

Text-books: Small sets of a wide variety of suitable text-books, and other books giving background information of a geographical nature suitable for primary school children.

Projectors: A film-strip projector. Possibly also a film projector in the larger schools.

Weather instruments: A thermometer. A simple rain gauge.

Display facilities: The classroom walls should be panelled with a soft board material that will take drawing pins easily for the display of pictures, diagrams, etc.

Chapter V

ART AND CRAFT

THE aims of Art and Craft as taught in the primary school are to encourage the child to give expression to his feelings and ideas with confidence and sincerity, to stimulate his natural creative impulse, to develop his general artistic sensibility, and to enable him to acquire control over tools and materials.

For the sake of convenience and clarity Drawing and Painting, Design, and Craft are considered separately at each stage, but it should be understood that this is an artificial division. Together they form a single important branch of education and cannot be separated without sacrificing much of their educational value. Design, which, in addition to such qualities as rhythm, harmony and pattern, includes fitness for purpose and the right use of tools and materials, is an essential element in all forms of Art and Craft work. Moreover, much of the work in Art may be given point and purpose by relating it to some form of craftwork: the useful correlation of lettering, pattern-making and illustration with bookbinding is but one example.

Hitherto it has been the practice to use the time allocated to the teaching of Art for drawing and painting only, and the period allotted to the teaching of Craft for work involving the manipulation of the tools and materials of the various crafts. This arrangement is not entirely satisfactory. In the first place, it tends to divorce Art from Craft and the latter becomes a matter of technical skill without imaginative or emotional content. In the second place, the girls, who from Primary 4 onward follow a formal needlework course in the period allocated to Craft, are denied experience of other craft materials and processes which is as necessary for them, educationally, as it is for boys. There is no reason why this should continue. Provided a reasonable balance is maintained between the teaching of Art and the teaching of Craft, a rigid division of the time allocated to each is unnecessary.

In Primary 4 to 7 some class-teaching is necessary, but much of the practical work should be done with the class divided into groups. It is not expected that all of the groups will be engaged in the same kind of work: some may be occupied with picture- or pattern-making while others are working at crafts.

For some children craftwork is a more natural outlet for creative

ability than painting or drawing: it is therefore essential that there should be provision for the teaching of Craft at all stages in the primary school.

Continuous development in Art and Craft throughout the primary school is desirable, but programmes should be planned to meet the children's needs as they arise, and not to conform to an inflexible scheme. The introduction of demands for realistic representation or technical accuracy at the wrong age can only do harm. If the child is led to believe that his spontaneous efforts are unacceptable his interest in and enjoyment of the work may be killed, and the normal qualities which should be developing will be destroyed.

Throughout the primary school stage most children pass through clearly defined phases of development in Art and Craft. Teachers must be able to recognise these phases if they are to meet the children's needs.

Between the ages of five and eleven the child draws symbols to represent what he knows about things rather than what he sees. In the early stages the symbols are generic – the same symbol may be used to represent different animals; his use of shape and colour and his correlation of things in space are emotional, not realistic. By the age of seven his symbols have changed from the general to the particular and he relates things to the ground line and to each other in a more or less orderly manner. He has also discovered the relationship between colour and object, and repeats the same colour for the same object in his paintings. He is more conscious of his environment and places the subject of his picture in a suitable setting. Between nine and eleven the child's paintings reflect his growing interest in the world around him and his mode of expression is more closely related to nature. He begins to devote attention to details – human features, hair and clothing – and he tends to indicate importance by an accumulation of details rather than by size. He makes people and things overlap in his paintings and organises them on a ground plane instead of a ground line. He becomes more conscious of the variation of colour in nature and may use colour subjectively.

Much the same kind of development can be traced in crafts. From playing with materials the child moves to the making of vague shapes enlivened by imagination and on to more definite forms. As he acquires more skill in the manipulation of tools and materials and his powers of invention increase, the thing to be made becomes more important than the act of making it, and he strives to achieve a standard of craftsmanship comparable to that of adults.

In all creative activities the intensity of experience determines the

urge for expression. It is therefore important that the subject which a child chooses, or is given by the teacher, should be one with which he is familiar and which will capture his interest. Even beyond the Primary 3 stage many children can be allowed to choose their own subjects, but there are some who will be unable to give form to their ideas without the help of suggestion. Since the child's interests change with his development subjects set or suggestions made for the different age groups should be carefully considered, and the child should be free to reject a subject which does not interest him.

PRIMARY 1, 2 and 3

Young children discover the nature of the world surrounding them by handling the materials of which it is made. The school should give opportunities for continued exploration and discovery and should encourage the use of the knowledge gained in constructive activity.

The value of such provision lies in the effort which it stimulates in the children. From this effort the child gains not only power over the material with which he is working but a satisfying experience and a desire to go forward to further discovery. It is this total effect on the attitude of children to difficulties which makes this provision of such significance in Primary 1, 2 and 3.

During a period covered by the term 'Art and Craft', therefore, a variety of materials would be available. Sand, water, paint, clay, crayons, paper, paste, glue, scraps of waste material, large building bricks, etc., together with some of the constructive apparatus now supplied, would be in use. The play-house and the shop with their opportunities for dramatic expression would be included.

When such a variety of materials is provided, short periods of twenty minutes or half-an-hour are not really suitable. Forty-five minutes should be regarded as a minimum for the older children, while the young children need an hour or an hour and a quarter. Clearing up and replacement of all material by the children is an essential part of the period.

It is easier if this time can be given at the beginning of the school day or immediately after the mid-day break. The classroom can be prepared and the teacher has an opportunity for grouping and displaying the material to its best advantage.

The skill of the teacher is shown in her choice and display of material, and her success is measured by the gradual progress of the children from experiment and discovery to selective use and construction. Though no direct instruction is desirable at this stage, the

teacher is by no means inactive, nor can she devote this time to other tasks – marking books, for example. Her approval and encouragement are decisive factors in the progress which the children make. Her anticipation of their need for additional material will ensure that there is no destructive or difficult behaviour which may arise when children exhaust the possibilities of the provision already made.

It is not possible in a short space to enumerate all the advantages to be gained from this provision. For a limited period daily children are given opportunity to choose freely and to experiment with the materials used in the great arts and crafts of man. Experience proves that manual and aesthetic development are better secured when the child is left to make what he likes, how he likes and, within reason, when he likes, than by any set lesson.

Among the materials and implements which should be available are the following:

Sand	Pastels
Water	Crayons and chalk
Clay	Scissors
Paint and hog-hair brushes	Paste
Building bricks	Glue
House-corner and book-corner	Scrap materials
Dressing-up box	Jig-saw puzzles
Hammer and nails	Mosaic shapes
Paper – plain and coloured	Miniature figures and toys

As the young child is not concerned with the realistic representation of things his drawings should not be assessed by adult standards, and no attempt should be made to teach him to draw in a realistic manner. The teacher may direct his attention to people and things likely to interest him and may show him how to use his equipment, but the method of representation should be left to the child. The events of everyday life will provide him with all kinds of interesting things to draw and paint, but he will get most enjoyment by recording experiences which have especially impressed him.

It is desirable that drawings and paintings should be made on a large scale. Bold, vigorous movements of the hand and arm should be encouraged, but these are possible only when suitable equipment and materials are provided. Large sheets of newsprint or sugar paper, hog-hair brushes, poster or powder colour, chalk and large wax crayons are the most suitable drawing materials for young children. Transparent water-colours, small brushes and fine pointed pencils should not be used. Many school desks are too narrow to take large sheets of paper. The most suitable type of support is a small double-

sided easel, but satisfactory work can be done with the paper pinned to the wall or spread on the floor.

First experience in pattern-making may be gained through the arrangement of objects. The child will express his desire for order and repetition through the spontaneous arrangement of shells, pebbles, beads, leaves, etc. His discovery of rhythmical line, made by the movement of the finger in wet sand, will lead him to make more permanent records of his feeling for rhythm in finger-painting and painting with paint and brush. As the child's manipulative skill increases simple border patterns made with cut-paper or printed with potato-cuts may be attempted. Patterns which begin with a single motif in the middle of the paper and grow outward by the addition of new shapes will provide an easy introduction to space-filling.

In his experience with materials other than paint and paper the child will at first do little more than handle them and play with them. Later, he will combine them in different ways to give form to his ideas and to express his feelings: or he may invest them imaginatively with the qualities of things which interest him – a block of wood may in imagination become a motor car. But the time will come when he is no longer satisfied with 'make-believe' and wants to construct something nearer to the real thing. When this stage is reached he will have to gain mastery over simple tools and materials and to find, through experiment, solutions to many problems of construction. By the time he reaches Primary 3 the child should have acquired sufficient control to be able to undertake the construction of simple toys and puppets, to model clay figures and to experiment with the early stages of some of the traditional crafts. If he is to learn from his own experience, however, he must be allowed to choose his own work and, so far as is possible, to devise his own technique. Some guidance in the use of tools and materials may be necessary, but it should be given to individuals or to a small group, not to the whole class. Technique will grow out of the urge for expression but at this stage it must remain a secondary consideration; creative expression and the enjoyment which the child obtains from his efforts are more important than technical accomplishment.

PRIMARY 4 to 7

There should be no sudden change of emphasis in the teaching of Art and Craft during this phase of development. Through practice the child will increase his manipulative skill in drawing and will learn to use a wider range of tools; he will be able to deal with more

resistant materials and to work with greater precision. Nevertheless, the creative aspects of the work should continue to be considered more important than the acquisition of skills and techniques.

DRAWING AND PAINTING

At this stage the child still draws what he knows rather than what he sees, but his experience of his environment is widening and his powers of observation and memory are becoming stronger. With freedom to express his ideas in his own way, and with guidance and encouragement from a sympathetic teacher, he will make the transition from the symbolic to a more realistic mode of representation easily and naturally.

As the child can express himself most freely about things that have some relation to his personal experience the most suitable subjects for painting will be found in scenes from everyday life, topical events and experiences in school, at home and on the streets. The more imaginative children may well be allowed to choose their own subjects, but others will require help before they can give pictorial expression to their ideas. The amount of help needed will vary with different children, but generally it should be as little as possible and should take the form of discussion and questioning, to stimulate interest and to help the child to select suitable material from his memories of personal experience. The conception of the picture and the mode of representation should be left to the child; copying from photographs and book-illustrations should never be suggested.

At the beginning of this period the child has not discovered the three-dimensional quality of space – his pictures are flat patterns – and he still uses size to indicate importance. In assessing the children's work, then, the teacher should look for a lively and imaginative use of symbols and for a harmonious arrangement of shapes and colours; distortions and exaggerations should not be disparaged.

With growing awareness of environment come a more realistic treatment of space and increasing interest in the details concerned with the characterisation of people and things. When this stage is reached the child's new interests should be reflected in the subjects chosen for painting; for instance, 'The Football Match' offers scope for the representation of three-dimensional space, while 'The Fancy Dress Parade' provides ample opportunity for characterisation and detailed drawing. Subjects requiring some memory drawing should be set from time to time; pictures may be based on familiar scenes to which the children's observation has been directed before the lesson. Mural frieze painting and the building up of large cut-paper pictures will afford scope for group work.

Picture drawing may be introduced in Primary 5. At first it is best to let the children make their drawings from memory after they have had two or three minutes to observe the model; working in this way they are less likely to be distracted by detail and to lose sight of the figure as a whole. Later, quick sketching direct from the model may be attempted, beginning with head-and-shoulder studies and proceeding to half- and full-length figures. These sketches should be used for figure compositions.

In the primary school picture-making is a more subtle form of pattern-making; a close connexion between these branches of Art should therefore be maintained. If periods of pattern-making alternate with periods of picture-making, the child's experiments with line, shape, colour, texture and arrangement in pattern-making will increase his capacity for pictorial expression. Some children have difficulty in making satisfying pictures because their pattern-sense is undeveloped: they will benefit by concentrating on various forms of pattern-making for a short period.

The techniques now used should afford the child the opportunity of experiencing mastery over his materials. It is important that he should be able to repeat the same colours for the same objects and to obtain the same general effects whenever he wishes to do so. Chalk and crayon are satisfactory for drawing in outline, but the child will wish to fill in large areas with colour; for this purpose poster-colour, powder-colour or coloured gummed paper are more satisfactory. The use of cut-paper for picture-making also helps the child to appreciate the need for overlapping shapes in his imaginative paintings. Hog-hair brushes are the most suitable type for painting at the beginning of this phase of development, and later for work requiring a broad technique, but when the child becomes interested in detail water-colour brushes should be supplied. Large sheets of paper give more freedom than drawing books and permit of variation in the size, shape, colour and texture of sheets on which the children work; a reasonably wide range of colours and textures should be provided.

DESIGN

Free pattern executed in paint, chalk, crayon or paste-graining should be continued and extended to include patterns based on a grid or network. In making grid patterns it is desirable that the children should be led to see that it is the relationship between units, not the detail of each individual unit, that creates satisfying pattern. This is best achieved by encouraging them to build up their patterns

by successive additions to each unit rather than by working out one unit in detail and repeating it.

Cut-paper units, potato-cuts and stencils should now be applied to the making of all-over patterns. Early attempts at cut-paper and potato-cut patterns tend to be monotonous and disjointed, but these defects can be remedied by connecting up the isolated units with free brush strokes, scribbles and textures which will also provide variety and enliven the pattern. Experiments with arrangement should be encouraged: patterns may be varied by inverting alternate units, by radiating four units from a central point and by altering the spacing. When the children have developed some skill in cutting and manipulating simple units more advanced work with potato-cuts and stencils may be attempted, including printing and over-printing in two or more colours.

In these early experiments with pattern, units should be based on abstract shapes, letters, figures or other symbols with which the child is familiar. The use of floral and other natural forms should be discouraged; at this stage the child is not capable of stylising them and, more often than not, makes only a weak realistic representation.

Valuable training in colour, texture and pattern may be gained through working in mixed materials. Interesting effects can be obtained by using two or three different media on the same pattern – for instance, the main shapes may be in cut-paper to which detail is added in paint and further elaboration in ink. The use of scrap materials such as string, cloth, beads, buttons and corrugated card provides unlimited scope for experiment.

From the earliest stages painted and printed patterns should be applied to practical ends. Patterned papers may be used to make book jackets for school books, paper hats and decorations for school parties, workholders and scrap-books. Specially designed papers may be made for use in bookcraft lessons; scarves, table-mats, curtains for puppet theatres and dresses for dolls and puppets may be decorated by means of vegetable or linoleum blocks and fabric printing inks. When work of this kind is undertaken with the higher classes the scale of the pattern relative to the size of the object to be decorated should be discussed.

Colour

Colour is an important element in picture- and pattern-making, but good colour cannot be achieved by rules and theories. The younger children will delight in bright colours and should be allowed to make their own selection and arrangement. For the older children some guidance towards a more thoughtful use of colour is desirable.

The teacher should seek to stimulate their interest in colour generally by drawing their attention to colour in nature and to the effects obtained by juxtaposing colours in pictures and patterns and by overprinting potato-cuts and stencils. The use of tints and shades should be encouraged and every effort should be made to persuade the children to mix the colours they need for their paintings instead of working within the limits of the ready-mixed colours provided. An experimental approach of this kind will help to develop an individual colour sense and will lead to a personal and expressive use of colour.

CRAFT

If well-chosen materials and the right kind of experience are provided at the previous stage there will be no break in continuity; the activities now undertaken will grow naturally out of the earlier play with materials. But at this stage the child has more definite ideas about the things he wishes to make; his urge to construct is strong and he will persist in the making of anything he really wants: much of what he now attempts will therefore be directed by his own interests. The following are some of the activities to which the child's experience of materials may now be applied:

Clay: modelling and pottery.
Papier mâché: modelling, puppetry and mask-making.
Soft stone and plaster: carving.
Wood: toy- and model-making, carving, making apparatus for other crafts (looms, sewing-frames, puppet theatres, etc.).
Paper and card: cardboard modelling and bookcrafts.
Fabrics, wool, etc.: appliqué picture making, making dresses for dolls and puppets, soft toys, weaving, fabric printing (with vegetable or linoleum blocks).
Mixed materials: illustrative model-making and puppetry.
Scrap materials: toy- and model-making and imaginative improvisations of various kinds.

The choice of crafts for each school will be influenced by the interests and abilities of the staff and by the facilities available; but whatever the choice may be there should be continuity in the scheme throughout this stage. In planning work and choosing materials for individual classes the mental age, abilities and interests of the children should be borne in mind. The development of creative ability is still the main aim and an experimental approach to craft should be encouraged; the kind of lesson which makes no demands on the child other than those of accuracy, skilful manipulation and conscientious workmanship is unsuitable for this stage.

Although the children should be given as much freedom as possible in the choice of the things they wish to make, the teacher must see that the work undertaken by each child is not beyond his capacity; when necessary, guidance in technical matters should be given to individuals or small groups. When a new material or process is introduced time should be allowed for experiment; but, although the child will often work out a satisfactory way of doing things through trial and error, waste of time and material and the risk of disappointment should be avoided by demonstrating the proper use of tools and materials when the need becomes obvious.

While the development of technical skill is a secondary consideration at this stage, the child should come, through his own experiments, to realise the value of careful workmanship; the teacher should accept nothing short of the best he is capable of achieving. The standard of the work will of course be affected by the tools and materials provided; these should be of good quality and care should be taken to see that they are properly stored. It is important that the tools should be kept in good condition.

Chapter VI

NEEDLEWORK

AIM AND SCOPE OF WORK

THE aims in teaching Needlework are to develop the child's skill in manipulation, to promote her sense of pleasure in a creative art, to encourage her appreciation of good taste and sound workmanship, and to train her in habits of neatness and cleanliness. By the time her school days are over, she should feel that her training in Needlework has provided her with a reasonable command of skills that she will require in a variety of domestic duties and with a useful and satisfying leisure occupation.

At all stages the work should be both purposeful and interesting. Once the child's interest is aroused she learns readily and is willing to face difficulties and strive to overcome them; if the element of interest is lacking she learns laboriously or even unwillingly and may well acquire a lasting distaste for needlecraft. It is the teacher's responsibility to quicken and maintain the child's interest by her skilful presentation of the subject, by her choice of attractive materials, and by her careful selection of articles which the pupil will feel a desire to make.

It is essential that from the beginning the fundamentals of good needlework should be taught – the correct use and handling of tools, the correct formation of the basic stitches, and the elements of processes which are more fully employed in subsequent work. If this end is to be achieved, the child must take a full and active part in all the operations that the lessons introduce. She must not limit her own activity to practice in sewing, but must learn by personal experience the problems involved in planning, measuring, cutting and fixing. She should be encouraged, moreover, to exercise taste in the choice of colour schemes, and to make her own contribution, however small, to the design on the articles she is working upon.

There are two main ways in which knowledge of new processes may be imparted: the first is by demonstration to the class as a whole, use being made of large-scale equipment and blackboard work; and the second is by the employment of 'self-teaching' equipment of normal size. The balance between these two methods will be determined by such factors as the size of the class and the number of groups within it of pupils at different levels of ability or proficiency. Where the composition of the class presents difficulties

which tend to retard the work unduly, the selection of demonstrations and 'self-teaching' apparatus assumes a special importance. In such circumstances, too, the teacher will be wise to choose articles and garments of a more simple design, and will see to it that each child has plenty of 'odd-minute' work to keep her profitably occupied while the teacher is engaged with other children.

In Primary 1, 2 and 3 the pupil will have had experience of various types of handwork which, apart from their intrinsic purpose, help her to use materials with dexterity, and so provide a valuable preparation for the needlework she embarks upon in Primary 4. The stitches to be taught when she is now introduced to needlework may be classified under two headings:

(*a*) simple fundamental stitches
(*b*) simple embroidery stitches.

From the beginning the exercises should be made as interesting as possible and so graded that the pupil can undertake them with some degree of confidence. In learning any stitch she should first be made familiar with its appearance when completed, then with the action involved in making it, and finally with the size of stitch best suited to her own manipulative skill. She has to learn to form the stitch with ease, to judge the spacing, to keep the stitches straight, and to carry out the whole operation rhythmically. It would be too much to expect her to cope with all these problems simultaneously, and it is therefore desirable that she should in the first stages use embroidery canvas and coarse material. The teacher should at all times ensure that no child is obliged, for long periods, to do work demanding close concentration or involving eyestrain.

Systematic teaching and supervision are an essential part of needlework instruction. The teacher should not allow a child to do as she pleases in the matter of holding her tools, in the hope that the right method will eventually suggest itself to the child's mind. The most effective means of training the eye and the muscles of the hand in habits of exactness and neatness is by frequent and systematic practice in holding material and tools in a correct position. A few minutes' revision of this practice should frequently be used as an introduction to needlework lessons in Primary 4 and 5. A child should not be allowed to sew unless she is using a thimble which fits properly. When control of the needle has been gained, and the correct holding of material has been mastered, the child may proceed to use more closely woven material and finer threads.

She should now make a series of graded articles for her own use, for her home or school, or in connexion with activities such as games

or projects. Thus her sewing will have purpose and she will realise the necessity for keeping her work in good condition.

As experience is gained and the pupil progresses towards Primary 7 there should be a steady improvement in skill, leading gradually to finer work. The training, as it widens in scope, should include planning work, cutting, assembling, constructive sewing, pressing, and simple embroidery. The teacher must at all times guard against giving excessive assistance; guidance is essential but a main purpose throughout must be to train the child in self-reliance and in methods of independent work. Proper recognition of this purpose will help to check any tendency to over-estimate the importance of a large output as tangible evidence of the work done.

MATERIALS

The teacher should make a careful selection of materials which

(*a*) are suitable in weave and texture for the type of work for which they are being used;

(*b*) are easy to handle;

(*c*) make a good background for coloured threads and simple decorative designs;

(*d*) will make an appeal to the aesthetic sense of the child.

Embroidery canvas, hessian, soft crash, coarse linen and casement cloths are suitable for the younger children; material of the type of linen, gingham and printed cottons is more suitable for the older girls.

TOOLS

As in all crafts, it is most important that tools should be chosen to suit both the user and the purpose for which they are intended. Every care should be taken, when choosing or ordering tools, to ensure that these conditions are fulfilled.

Needles: The eye of the needle should be large enough to make threading easy, but not so large that the needle constantly becomes unthreaded as the child works. The needles should be sufficiently short for the fingers to control. Wool needles are recommended for the early stages as they have a blunt end and are suitable for work on embroidery canvas, hessian or coarse crash. As the pupil progresses, she can proceed to use crewel needles with embroidery cotton, and later 'sharps' and 'betweens' with sewing cotton.

Threads: Embroidery wools and non-stranded embroidery cottons are suitable for use on the coarse materials. Gradual progress should be made towards the use of finer threads on finer materials.

Thimbles: Every child should possess a thimble which fits her, and she must always use it when sewing.

Scissors: Scissors should be of good quality. Pointed scissors (four and a half inch) are recommended for regular use and larger scissors (six or seven inch) should be used for cutting out garments.

Pins: A supply of steel pins should be made available for the children's use.

Tape-Measures: An adequate supply of durable tape-measures is necessary in every class.

Knitting Needles: Knitting needles should be short and coloured. Sizes 7, 8 and 9 are suitable. Steel knitting needles may be used in Primary 7, but are not recommended for use in Primary 4, 5 or 6.

Knitting Wool: Primary 4 and 5 should use skeins of embroidery wool, 4 ply or double-knitting wool. Primary 6 upwards may use 3 ply wool.

Storage of Work: It is recommended that every girl should have a box in which to store her needlework and her needlework apron.

Pressing Equipment: Irons and a skirt board (or blanket and sheet) are essential.

SCHEME OF WORK

The following indications may be found helpful in forming a scheme of work:

Sewing

Tacking and running stitches, with embroidery wool and, later, thick embroidery thread, on embroidery canvas and hessian, to make mats, dressing-table sets, needlecases, etc.

Preparing hems; tacking and running stitches and decorative forms of both; chain stitch, loop stitch – to be used in making needlework aprons, tray-cloths, etc.

Hemming, top-sewing and French seams; making garments for outer wear; use of felt for small articles.

Use of binding and facing for straight and curved edges; sewing on of buttons and fastenings and making of loops. Garments for under or outer wear, for example petticoats, cotton skirts and sun-suits, should be made in Primary 7.

Knitting

Knitting on two needles of such small articles as doll's clothes, pincushions, etc.

Purl and plain knitting: mittens, slippers, etc.

Shaped knitting for scarves, caps, vests, etc.

Four-needle knitting from patterns for mittens, socks, etc.

Chapter VII

NATURE STUDY

NATURE Study should aim at giving the child an intelligent understanding of his natural environment through first-hand experience obtained by direct observation. It should also inculcate a love for nature and an appreciation of its beauties.

The study of nature has long held a place among people living close to the land – shepherds, foresters, game-keepers, farmers – whose skill is based on habits of accurate observation and the relation of observation to past experience. By placing the child directly among the realities of nature the teacher seeks to promote an understanding of environment which has tended to be lost from the education of children growing up in increasingly urbanised surroundings. It is through this direct contact of the child with natural things, both animate and inanimate, that Nature Study can make its most valuable contribution to his education. At all times the child should be encouraged to rely on his own careful observation for his facts; and as he grows so will his powers of discrimination and of independent thought. His ability to reason from the facts observed will develop and the whole process will approach scientific inquiry. In short, Nature Study should stimulate the child's mind 'to be critically active rather than passively receptive'.

The young child is characterised by a general interest in the outside world and by an intense curiosity about living things. This curiosity is centred less upon the appearance than upon the activities of other creatures, particularly such activities as have an obvious parallel in the child's own life. Through Nature Study the teacher has the opportunity to use this innate inquisitiveness both out of doors and in the classroom in order to broaden the child's experience, enrich his awareness, and foster his desire for knowledge of the living world. Her attitude and her influence are from the first all important in deciding whether this vital interest which the child takes in his environment will wither or flourish. If she is ready to listen to his stories, examine and discuss the specimens that he brings to school, and above all share in his joy in discovery, then this interest will grow apace. Expert knowledge on the part of the teacher is not essential. Of far greater importance is her willingness to take part in the child's explorations and to stimulate or extend curiosity as well as to satisfy it. She should use every opportunity that the world

of nature offers to arouse a sense of wonder and an awareness of beauty which will encourage sympathy with living things and a feeling of responsibility towards them.

As the child matures, his interest, hitherto mainly concerned with living things, will expand. He may now ask questions concerning the sun, moon and stars, the weather, colours, sounds, and machines. Many children at the end of the Primary stage are more interested in how things go than in how they grow, and they delight in discovering what makes an alarm clock ring, how a compass needle tells direction, or what causes an electric torch to give light: a course based on these widening interests will pave the way to the more systematic treatment of Science in the secondary school. Regarded in this way, Nature Study is the growing point of a science that has not yet reached the stage of organisation and understanding based on a special training in deductive reasoning. Yet it is important for the teacher to realise that the aims and methods of Nature Study are the same as those of any other science.

NATURE STUDY OUT-OF-DOORS

The most valuable of all Nature Study activities are those that have their centre out-of-doors in the school garden, in the fields, in the woods, or on the seashore. Here living plants and animals are seen and studied in their natural surroundings and the child's interest is readily awakened.

Outdoor work develops the habit of looking for, seeing and thinking about living things at first hand. Classroom work alone, however good and thorough, should be regarded as incomplete without outdoor activities, even though the scope of such activities may have to be limited by the character of the school's environment. Country schools are usually more favourably placed than town schools, but even in a town access to a park or a field or a garden will often be possible. A great deal may be learned about living things by the observation of a single tree throughout the year.

For many teachers, the school garden will provide the most accessible means of studying living things. In this garden the constructive tendencies of the children can have full play in building small rockeries, setting up bird feeding-tables, making sundials, planting a hedgerow, or sinking a stone trough in the ground to make a water garden where water plants and animals can live. Many schools, even in the heart of towns, are able to set aside a small piece of ground to be used for a Nature Study border. Here the children can sow the seeds of hardy annual plants; they can grow the cereal grasses that feed mankind – wheat, oats, rice, maize, rye; they can

plant tree seeds and seedlings, bulb plants, sweet smelling herbs; they can grow and eat salad plants. Here also a wild flower garden can be established, a place where interesting plants brought back from excursions, such as wild arum, lesser celandine, butterwort, etc., may have a home for a time. On the plants or in the soil the children will find ladybirds, bees, caterpillars, slugs, earthworms and beetles. But some town schools cannot produce even a border as the demands for a playground must have prior consideration. In these schools the children can transform the drab appearance of the playground by growing plants in window-boxes, wooden tubs, old sinks, troughs, or hanging baskets. The garden of the town school, however makeshift, will provide a valuable training as it will present features of plant and animal life which it would be impossible to study in the classroom alone.

Class expeditions are a source of great enjoyment to the children but they may be little more than purposeless rambles unless careful thought is given to their organisation. Well planned, they provide plenty of scope for direct observation and discovery and they encourage thought and initiative on the part of the pupils. While it is seldom desirable to limit the children's observations, the primary purpose of every expedition – except with very young children – should be made clear to the class; for example, to find signs of spring, to collect grass flowers, to discover what animals live under stones, to map a hedgerow, to search for weed plants in a pasture. Nevertheless the children should always be on the look-out for the occasional exciting natural event – the flight of a heron, the starting of a hare, the swarming of bees.

In planning the expedition the teacher should first make a reconnaissance. She may then prepare suitable questions which the class will be enabled to answer as a result of their explorations; for example, where certain animals are to be found on the seashore, how they move and where they shelter; or how certain plants scatter their seeds, and what the seeds are like in shape, colour and size. Again she may decide what material would be most suitable for observation or collection at that time of year; for instance, the class may go to a hedgerow to find examples of the different kinds of climbing plants, to a pond to collect insect larvae, to a garden in September to study the habits of the garden spider, or to a farm to list the crops growing in each field. On longer expeditions each child, or group of children, can have a questionnaire to complete.

Once indoors, the children will examine and discuss the results of the expedition; some of the animals and plants may be kept in the garden or on the nature table for further study. But it should be

borne in mind that it is the discoveries made by the children out of doors that are of first importance.

TEACHING AIDS

The necessity for dealing at first hand with natural objects and occurrences should be ever-present in the teacher's mind. Dependence upon text-books, pictures or photographs for information which could be obtained from the pupils' observations is altogether foreign to the spirit of Nature Study.

The function of the nature book or illustration is to help the child in naming his finds and in checking and supplementing the discoveries made through his personal observations. The teacher should build up a small library of illustrated nature key-books and make a collection of charts and specimens to aid in the identification of living things. Some films and film-strips may be found helpful in learning to recognise birds, insects and flowers. Gramophone records may be used in the identification of bird song.

A number of simple books on natural history should also be included in the library to encourage the pupils to form habits of acquiring and sifting information which cannot be readily obtained from direct observation.

The teacher will, of course, obtain information and helpful suggestions for nature activities from text-books, biographies of naturalists, B.B.C. nature programmes, etc., but she should use her knowledge to guide and stimulate her pupils towards further discoveries and observations and not primarily to inculcate facts.

The School Nature Study Union publishes a quarterly journal on the teaching of Nature Study. The most useful articles from this journal can be obtained as leaflets, e.g.,

Suggestions for Methods of Nature Study with Children under 8 years
Nature Activities in the Junior School
The Keeping of Animals and Plants in School.

PRIMARY 1, 2 and 3

During the five or six years before the child comes to school his awareness of the world of which he is a part has developed from the rudimentary sensations of the early months to an increasingly clear apprehension of the nature and behaviour of the things around him. He learns to distinguish differences of shape, size, quantity, taste and texture and becomes increasingly aware of the cycle of the year and the effects of the changing seasons. Although the impressions and interests created by his environment may often have been transient,

there remains nevertheless a store of experiences upon which the teacher may build. School should prove to be a fresh and interesting place where the child will find things living and growing, and where there are new and exciting happenings that keep alive curiosity and the sense of wonder.

The child's interest in living things is so much a part of his whole experience that Nature Study at this stage should be treated informally, and no attempt made to confine it to a set period in a timetable. As opportunities to study natural things arise in the classroom, in the playground or on those occasions when a child recounts something seen at home or on the way to school, the teacher should use them to advantage. In addition she should reserve some time each week during which the child's experience of nature may be widened, and whenever possible this time should be spent out-of-doors. If part of the first sunny day in each week can be spent outside, the children will bring back into the classroom material which can later be sorted, observed and discussed at a convenient time. The 'finds' should be the children's rather than the teacher's, but the teacher should be prepared to share and follow up their interest, developing it by her questions and suggestions. Experience has shown that expeditions are seldom feasible or desirable with young children, but in the school playground they can move freely and spontaneously, and if they have access to a nearby field, wood or park they can spread out and explore in safety.

The opportunities for Nature Study found within the grounds of town schools vary greatly in extent. In some schools there are gardens, lawns, borders, trees, where living things may readily be studied; in others there might appear to be little more than brick walls and concrete yards. Even in the barest playground plants and animals may be found, while there are occasions when events such as a rainbow in the sky or a snowfall or a flight of birds hold interest for the children. Sometimes a park or public garden may be near enough to make nature expeditions practicable, even with young children. But it will often fall to the teacher to provide living material in the playground and in the classroom through the cultivation of plants in tubs, window-boxes, miniature garden trays or flower pots, and through the keeping of animals such as worms, insects, fish or amphibians in aquaria and vivaria.

The surroundings of country schools always offer fuller opportunities for the observation of trees, birds, insects, grasses and flowering plants. The children can watch the behaviour of the small animals that live in the hedgerow, the ditch, the stone wall and the long grass. Very little suggestion will lead the children to explore

contrasting textures with their fingertips, to become aware of scents and smells, and to listen to and identify the country sounds and the songs of birds. Winter brings its own possibilities. The changes in trees and hedgerows may be noted; tracks can be followed in the mud and the snow; the children can go out to see what the high wind of the previous night has done; birds fly down to the feeding-table and their movements and eating habits may be observed from the classroom windows. Things are seen in their natural setting and the work is inevitably seasonal.

Once indoors again, there may be a brief 'showing and telling' time when the children can say how and where they made their finds, and the teacher can help them to talk about these discoveries. At times, the children may ask the teacher questions to which she cannot immediately supply the answers. Often she can help them to find the answers for themselves by further search or by looking for pictures of the find in a well-illustrated reference book from which she can read aloud a little of the relevant information. Small children like to identify things by name but they may wish to know very little more, and it is certain that lengthy explanations from the teacher have no place. Much more important to the child are the loan of a magnifying glass, the provision of a suitable container for each find, and the granting of a safe place in which to keep it for further observation.

A Nature Table is necessary for every classroom in a city or country school if there is to be some continuity of observation. Here finds can be displayed, seeds germinated, plants grown and animals kept. The table should be low enough for the children to observe their finds closely. If animals are kept it is essential that the conditions and duration of their captivity should be reasonable and that they should be suitably fed. A plentiful supply of clean jars and containers, of various sizes, should be available. Reference books and pictures can usefully be kept near the Nature Table. While the primary purpose of the Nature Table is to hold the material which the children bring in, it is desirable that the teacher should provide additional material. Her contributions can stimulate new interest and give impetus to further collection.

The children's interest in their finds and observations may find expression in various ways. A class Nature Diary, Nature Calendar, Farm News, and Weather Chart, are all ways in which a simple record can be made. In Primary 1 and 2 they will usually take the form of pictorial records, though pressed specimens can sometimes be used.

In Primary 3, the children are capable of more sustained interest

and they begin to be collectors rather than mere hoarders. The teacher should continue to foster their interest in living things by widening their experience and by giving them the opportunity to gain the more detailed information that they now desire. At this stage many children will be able to use simple reference books independently and to keep individual pictorial and written records. Class records may now contain more detail. Dated personal records, if carried forward to subsequent classes can have a considerable value, e.g., in comparing late and early seasons.

The children now have more retentive memories and they are more aware of seasonal changes; the appearance of a nearby stream, the predominating colours of trees and flowers, the arrival and departure of migrant birds are all sources of interest. They will remember some of the commoner weather signs and will enjoy learning the weather proverbs and seeing if they are fulfilled.

The children remain the chief searchers for material, with the school surroundings or a nearby park their safest exploring ground, although expeditions a little farther afield may sometimes be possible. Through experience the children gradually acquire more caution in their behaviour. They find that much patience is required if they are growing plants or caring for animals.

At the end of Primary 3 the children should go forward alive to a whole range of interests in their surroundings and eager to explore the more varied world beyond their immediate horizon.

PRIMARY 4 to 7

In Primary 4 and 5 the teacher should lay open a wide environment for her children to explore. Expeditions farther afield may now be possible – to a wood, a stream, a farm or the seashore. In a town, visits can be made to a park, a garden, a pond or a river bank. In exploring this more varied environment the children will find many new plants and animals, but they will also have the opportunity to study, in greater detail and in relation to new surroundings, the plants and animals they already know.

The work at first will include many of the activities carried out in Primary 3, but the course should now be arranged along more definite lines. Thus it may be helpful to concentrate on a selected topic, such as growing various kinds of tree seeds or making a rock garden. Sometimes the class may set out on an agreed quest, for example finding disused birds' nests, looking for caterpillars in a garden, searching for 'nature tracks' such as foot-prints, food remains, fur and feathers or mapping the common seaweeds on a

seashore or the trees in a park. Again, the children may each be given a leaf (from a number of kinds) and asked to find the tree to which it belongs and to bring back a twig, a fruit or flower, a bark rubbing and a rough sketch showing the shape of the tree. This last kind of lesson may have many variations, all calling for initiative, close observation and purposeful activity on the part of the individual child.

Although at this stage the children will have a definite objective on their expeditions, they should always be encouraged to note any interesting natural happenings and to share their experiences by bringing back material, by recording their discoveries or by describing the event at a 'nature report' time.

The children will now be old enough to keep individual Nature Study diaries in which they can write simple illustrated accounts of their discoveries and observations. Here they can make a progressive record of the plants they grow and of the life histories of the insects, fish and amphibians they keep. These records may include notes on weather conditions and on seasonal changes. In this way each child builds up a record of all observations of interest to him; further, the Nature Study diary can form the link between class lessons, expeditions, garden activities and independent observations out of school. As far as possible the child should be encouraged to organise this record for himself, illustrating it with sketches, diagrams and tables of observations, drawing from life where possible and keeping dates accurately. Such a record helps him to clarify his ideas and to consolidate his knowledge; too lengthy recording, however, becomes laborious and defeats its own ends, while concise entries encourage accuracy and interest. With children who find writing, and even drawing, a real difficulty an effective stimulus is to make a monthly Group Nature Diary by pasting a selection of the pupils' notes and drawings on to a large sheet of cardboard which can be displayed beside the Nature Table. The same method might be used to record Group Nature Projects such as a study of pond life, a hedgerow, plant and animal camouflage, birds seen in the village or the lives of the animals on a farm.

The child should now be ready to undertake the responsibility for looking after a part of the Nature Study garden, or if space is limited he may be one of a group in charge of a window-box or an indoor garden tray. The growth of plants from seeds, cuttings, bulbs, etc., will provide variety and continuity of observations. In the garden also, the child is certain to meet such common animals as butterflies, moths, bees, beetles, spiders, centipedes, snails and earthworms. If a supply of jars, tins, breeding cages and vivaria is

available for housing these animals, the children can study, by actual observation, how they breathe, feed, move, grow and reproduce. Earthworms may be kept in jars or boxes, filled with soil, where their tunnelling, feeding, reaction to light, humidity, etc., may be observed; provided the earth is kept moist and some leaf mould is added from time to time, they may be kept indefinitely.

Frogs, newts and other amphibians may be kept in vivaria made from large boxes or biscuit tins. Insects of many kinds may be hatched from eggs and reared on suitable food-plants grown in pots or within cardboard boxes with cellophane windows. A study of the living things found in fresh water never fails to prove enthralling to children and it has the great advantage that simple 'ponds' in the form of pie-dish, baking tin, or jampot aquaria may be set up in the classrooms of schools having little opportunity for studying the natural environment. Many small aquaria are more valuable than one or two large and expensive tanks as the carnivorous can be separated from the herbivorous animals, and the habits and life-histories of individual animals may be studied more readily. As they grow older the children should assume responsibility for the maintenance and care of the Nature Table and of the aquaria and vivaria.

The Nature Table should continue to be a centre for frequent discussion; for example, specimens of common poisonous plants should be displayed with a warning notice, and the risk of eating the fruits, seeds, or swollen roots of wild plants emphasised. The movement of snails on the glass side of an aquarium can be compared with the movement of earthworms; the different materials used by caddis larvae in making their cases will excite comment; the damage caused by the pests of the school garden and how to prevent it can be discussed with the children.

A class Nature 'newspaper' should be kept to record events in the plant and animal worlds, weather changes, farm news, and interesting discoveries. This newspaper should also provide incentive to the children through 'first find' competitions, through suggestions of interesting things to look out for, by the display of pictures of the month's flowers, diagrams of important star groups, or labelled specimens of common seashore animals.

In Primary 6 and 7 there should still be plenty of opportunity for the continued general observation of plants and animals in the classroom, in the garden, on the farm and in the field. With these older children observation of living things will become more detailed and the beginning of comparison and classification may be attempted – wind-pollinated and insect-pollinated flowers, insects and spiders, the daisy family of flowers, butterflies and moths, food grasses and

weed grasses. The children should now be able to set up simple experiments in the garden or on the Nature Table: for example, to find how seedlings grow under varying conditions of heat, light and moisture; to find what colours attract bees, flies and butterflies; to find how liming helps the farmer's crops. The structure, life history and behaviour of animals can be treated more fully; questions such as the relation of structure to the type of food eaten, the problems of living in water, and the interdependence of plant and animal life can be discussed.

The constructive tendencies shown by pupils at this stage have a readily available outlet in many schools through the making of a Nature Study garden. In schools where a garden was maintained by the senior pupils before reorganisation a plot of ground will be available. To provide facilities suitable for the teaching of Nature Study this ground should be laid out with a lawn, beds of annual and perennial flowers, examples of common trees (both deciduous and coniferous), shrubs to provide flowers, fruits and autumn colours, a rockery, a water garden and small pond, a heath garden, plots where food plants can be grown and where experiments may be carried out. In schools less favoured it may be possible to provide a small border as a source of Nature Study material. In the construction and the maintenance of such Nature Study gardens the pupils of Primary 6 and 7 will meet the seasonal and environmental problems of living things.

In Primary 6 and 7 the pupils should continue with their personal Nature diaries, greater stress being laid on accuracy of observation and exactness in illustration. Lists should be kept recording the plants, insects, birds, etc., seen. Observation games of the 'I spy' kind appeal greatly to children at this age. Again, their tendency to work in teams can be turned to good account through group activities, such as making a simple survey of the school district showing the distribution of plants, insects, birds, farm animals and crops on outline maps. In this way the nature study and the geography of the school neighbourhood meet in the consideration of the relationship of plants and animals to the physical features of their environment.

Towards the end of the Primary stage the Nature Study course might be extended to include a practical treatment of some everyday aspects of physical science which excite the curiosity of children. Boys especially are interested in how things go and they will obtain intellectual satisfaction from the examination of mechanical devices of all kinds. To stimulate this interest the teacher should provide an investigation box. Here will be available simple mechanical toys,

old alarm clocks, an electric torch, small pieces of mirror, a compass, magnets, etc.

No attempt should be made to build up an organised body of scientific knowledge at this stage. The topics selected for study should be treated by helping the pupils to find answers which will satisfy them for the time being and which are in accordance with the scientific facts. Answering the question 'How does it work?' is a sound guiding principle.

Work of this kind, both physical and biological, will continue to foster the child's curiosity and sense of wonder and will provide a suitable basis for the Science course of the secondary school. In this connexion teachers may occasionally describe how scientific discoveries have been made and tell their pupils something of the lives and work of men and women who have contributed to the advance of science.

On leaving the primary school the child should have a wide elementary knowledge of the plants and animals found in his locality, gained through a study of living things in the field, in the garden and in the classroom. In addition he should have some acquaintance with the commoner physical phenomena.

Chapter VIII

PHYSICAL EDUCATION

In the following programme the work in the Physical Education lesson is considered with reference to two main divisions – Primary 1 to 3 and Primary 4 to 7. The needs of older children in the unreorganised school are dealt with in the Appendix.

For each of the two main divisions, Basic Physical Education, Dance, Games and, in Primary 4 to 7, Swimming, are dealt with in separate sections in which general principles are discussed. In addition, on pages 134 – 144 will be found lists of exercises of various types suitable for the Basic Physical Education lesson – body movements, foot and leg movements, etc. – from which a selection may be made. Detailed suggestions on how this selection might be made for each class are set out for the use of teachers who desire guidance in the matter.

In order to carry out the Physical Education programme recommended for primary schools, the children should wear clothing which is light in weight, loose and easily washed. Wherever possible they should be encouraged to change into this type of clothing (see P.P. plates 1 – 20*) but where this cannot be managed, the removal of outer garments is necessary.

The problem of footwear is a difficult one but it must be realised that children cannot move with safety, or be fully agile, if hampered by unsuitable boots or shoes. Every effort should be made to encourage parents to provide proper shoes and, where possible, arrangements should be made to store them in school. Where conditions allow it, barefoot work is recommended. Because of the restriction imposed on movement and, indeed, because of the danger involved, no child should be allowed to work in stockinged feet.

It is important, but not always possible, for the teacher to know of any physical disability or health defect in a child which may

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**Note*—In this Programme frequent mention is made of *Physical Education in the Primary School:* Part One, *Moving and Growing;* Part Two, *Planning the Programme,* prepared by the Ministry of Education, England, and the Central Office of Information, and published by H.M.S.O. in two volumes at 6/- each. Teachers are strongly recommended to obtain copies of this publication. For references to *Planning the Programme* the abbreviation P.P. is employed.

necessitate the taking of special precautions. She should consult with the Principal and with the child's previous teacher and should inform herself of the types of activity which the child may, with safety, undertake.

PRIMARY 1, 2 and 3

The main part of the Physical Education Programme at this stage is the lesson which develops natural physical skills such as jumping, throwing and climbing, and gives all-round bodily exercise. In addition, movement lessons which develop the elements of dance and dramatic expression may well be included. A daily lesson of at least 15 minutes is recommended, and it is suggested that not less than three should be basic lessons, that is those which give all-round body-training.

BASIC PHYSICAL EDUCATION

Primary 1

By the end of their first term Primary 1 should be able to work independently and use space sensibly; to stop and listen on signal; to obey instructions quickly and quietly; and to care for apparatus.

From the beginning, children should be trained to remove and put on their own heavy footwear and outer clothing. Time given to this training is well spent.

A variety of apparatus including bean-bags, skipping ropes, small hoops, large balls and climbing equipment is required, and the children ought to learn how to place the small apparatus in position at the beginning of the lesson and to put it away tidily at the finish. They should be allowed to choose their own piece of apparatus and work freely with it, thus having opportunity to explore and discover new movements and to repeat known ones. During the remaining part of the Primary 1 year a wider range of apparatus (including small balls and bats, jumps and tumbling mats) should be used. The apparatus is the challenge; the venturesome may try out feats which would not appeal to the more timid; some may enjoy jumping over three blocks of wood piled one on top of another while others may find it an effort to jump over one. The teacher will see when individual praise or encouragement is required and also when it is necessary to help those who are more interested in other children's apparatus than in their own. From the beginning all must learn to share apparatus and, when changing one piece of small equipment for another, to return the discarded piece tidily to its correct place. It is important that they should learn to work inde-

pendently and to avoid bumping into others or getting in their way. When, for example, some choose to jump a series of sticks balanced on tins it may be necessary to suggest that everyone should go in the same direction.

In some cases the children will, of their own accord, work with different pieces of apparatus, thus obtaining some degree of change in muscular effort. Movements which obviously use different muscles are jumping, climbing and activities involving hand and eye co-ordination. If it is noticed that certain children use the same piece of apparatus constantly, it may be necessary to organise a change of occupation. One or two 'changes' for the whole class are often beneficial, for example, a change from climbing, with its use of large muscle groups, to ball handling which requires less strength and a different type of co-ordination.

In certain activities, especially those on large apparatus, e.g., climbing frames, it is necessary to restrict the numbers to avoid overcrowding; children must, moreover, be left free to choose their own practices and to progress at their own speed on this apparatus. (Reference: *Planning the Programme*, p. 12, paragraph on *Safeguards*.) While some children may be slow to attempt even the simplest movements on large apparatus – and no child should be forced to use a piece of apparatus which frightens him – others will try out difficult feats which they will soon perform with apparent ease. It is important that the slower child should not be hurried and that he should be allowed to try things out in his own time. Slow, careful exploration and repetition should be encouraged, and the teacher must avoid creating any feeling of anxiety which might upset the confidence of the class. Children are able to assess their own powers and will not attempt the feats of those more agile than themselves, provided they are not urged to do so.

Climbing apparatus may be fixed indoors, fixed outdoors, or portable. There are many different types which offer a wide range of activity to children of primary school age, but in planning apparatus it should not be overlooked that many schools can make good use of existing facilities, e.g., walls, trees, etc. Much can be done by improvising, especially in some of the older schools where strong benches, stools or discarded desks exist. Such items as ladders, poles and planks are useful in any school and, where overhead attachments can be provided, horizontal and vertical ropes and rope ladders are of value. In schools where the younger children have a playground to themselves it will be possible to provide apparatus specially for them and larger pieces for the older pupils. In general, however, certain pieces of apparatus will be used by all classes. In

this case the younger children will use the lower bars or ropes, and inclined planks will be fixed at a low level. Although a few agile ones may attempt more daring feats, the majority will use the apparatus in a more limited way. Plates 1 – 13 in *Planning the Programme* show different types of apparatus, and details are described in the paragraph *Apparatus* on pages 8 and 9. When the provision of apparatus is being considered expert advice on selection and fixing should be obtained. All possible precautions must be taken to ensure that each piece of apparatus is steady and secure, and frequent testing should be carried out so that any deterioration will be detected.

Primary 2

At the Primary 2 stage free practice should be continued but some directed activities may well be introduced. Although the teacher may select the apparatus or the activity, the children should still be allowed to practise at their own pace. Careful observation of each child's progress is essential so that the teacher may notice when activity becomes purposeless and suggest remedies (*Moving and Growing*, page 37). In comparison with Primary 1, pupils in Primary 2 should be better able to put the apparatus in position and to get ready for the lesson quickly. They should also show more confidence and initiative and an improvement in control and skill with a wider range of apparatus. In addition to having improved in skills such as throwing, catching, skipping and jumping, they should now be more experienced and courageous in activities such as balancing, climbing, running up inclined planks, etc. They should also have opportunities for practising movements such as crouch jumps where the weight of the body is taken on the hands, and others such as rolling and tumbling.

Primary 3

By Primary 3, as a result of more directed teaching, the children should understand what is meant by good performance, so that the aim of each practice is known and a higher standard attained; e.g., in crouch jumps the first aim should be to raise the hips as high as possible and, when that is achieved, to perform the movement more slowly and with greater control. Similarly, elementary ball handling should now include accurate throwing and catching, first attempts at skipping should have become easy rhythmic movements, and when bowling a hoop the child should be able to control and steer it. There should still be time and scope for the practice of both 'directed' and 'own choice' movements at each child's own pace. This gives the teacher opportunities for individual correction and

coaching. The children should now be able to work in pairs for certain activities and learn to help one another.

Teachers should, as far as possible, take note of each child's progress, e.g., apparatus chosen, initiative and confidence. The record of the weekly lessons given should show the apparatus used and the amount of 'free choice' and 'directed' work given. Many teachers will use their own framework for these lessons, but the following example is given for those who wish to have some guidance. It may be adapted to suit the needs of the class or the amount of apparatus available:

(1.) Free practice with small apparatus.
(2.) Class work: (i) hand and eye co-ordination;
(ii) jumping and leaping;
(iii) spine mobility and weight on hands.
(3.) Free practice with large and small apparatus. (In Primary 3 the children should be able to work in groups.)

Many sources of material are available from which selections can be made to suit the needs of the class. For those who wish to have guidance as to the rate of progression which might be expected, graded lists of movements suitable for class work (No. 2 above) are given in the Synopsis of Activities at the end of this Chapter. It is suggested that the following sections of each list be used for children of this age:

Primary 2

(*a*) Hand and eye co-ordination. Synopsis 2E, numbers 1 – 4.
(*b*) Jumping and leaping. Synopsis 2A, 2B, 2C, numbers 1 – 4.
(*c*) Spine mobility and weight on hands. Synopsis 2D, 2F, numbers 1 – 4.

Primary 3

(*a*) Hand and eye co-ordination. Synopsis 2E, numbers 5 – 8.
(*b*) Jumping and leaping. Synopsis 2A, 2B, 2C, numbers 5 – 8.
(*c*) Spine mobility and weight on hands. Synopsis 2D, 2F, 2G, numbers 5 – 8.

In no class, however, will all pupils reach the same standard at the same time and, in using the above scheme, allowance must be made for those who have little natural aptitude and may not improve at the same rate as the class as a whole, and also for the very agile whose progress will be more rapid.

Where Primary 1 and 2 or Primary 1, 2, and 3 are taught together in one class (Junior Division) more time could be given to free

practice (No. 1 in framework given above) in order to give the teacher an opportunity to coach the older children, and to teach them the various activities suited to their ability. In addition, a variation of 'group practices' would give scope for the young children to play freely with selected apparatus while the older ones practise more advanced movements. An example of a Junior Division lesson for Primary 1, 2 and 3 might be

(1.) Free practice with small apparatus.
(2.) and (3.) Group practices:

Primary 1

(*a*) Free play with bats and balls.
(*b*) Free play on tumbling mats and climbing apparatus.

Primary 2

(*a*) Rolling backwards and forwards on mats and climbing freely on large apparatus.
(*b*) Jumping over canes balanced on wood blocks.

Primary 3

(*a*) Crouch jumps with variations.
(*b*) Run, jump high and land in crouch position; and run up inclined plank, jump off and land.

All groups should start with the practices marked (*a*) and then change to (*b*).

DANCE

With young children, dancing is concerned with the development of the expressive quality of movement and not with the learning of set sequences or dances. Dance here involves movement of the body as a whole and not footwork only; e.g., happiness and exuberance might be expressed by quick running and vigorous jumping or by clapping and stamping. In this programme dance is considered from three points of view: first, without accompaniment, second, with vocal or percussive accompaniment and, third, with music.

In the first place the use of music is not essential: children will dance without any accompaniment, e.g., spontaneously for the sheer joy of movement, or in a more dramatic form when they recreate for themselves episodes from stories and real life or imitate animals or characters such as soldiers and giants. With young children this movement will be rudimentary in expression and ideas will not be sustained.

Secondly, children will dance to their own accompaniment using their voices, e.g., humming or lilting, or to percussive accompani-

ment with such instruments as the tambour and the triangle. As well as introducing simple rhythms, these instruments can be used to develop different qualities of movement, e.g., the light suggested by the sound of a triangle and the strong by a drum. While some children will want to accompany themselves, others may work in pairs, one playing while the other dances. This may lead to dancing in small groups, each child expressing the quality of movement suggested by his own instrument, or to all dancing to the same accompaniment. Before leaving this section on dancing to individual accompaniment mention should be made of singing games such as 'Lubin Loo', 'Here we go round the Mulberry Bush' and games to nursery rhymes. These are often enjoyed as activities in which all join together at the end of a lesson.

Thirdly, musical accompaniment can be used to stimulate movement. This type of lesson is often referred to as 'Music and Movement', but when used as part of Physical Education the emphasis is on the development of movement and not on the teaching of music through movement. The music should be simple with short repetitive themes and the children should be free to interpret it in their own way. Some may imitate the rhythmic pattern closely, some may be influenced only in a general way by the music. The ability to dance in time with the music may be beyond the powers of many children of this age. It will develop gradually provided freedom of expression is not restricted or the child made to feel inferior. Musical accompaniment can also be used to introduce different qualities of movement, e.g., slow, graceful, quick, heavy, light, strong, weak; but although the quality will be determined by the music, the child should be free to express this quality through whatever type of movement he chooses.

The chapters on Dance in *Moving and Growing* and *Planning the Programme* published by the English Ministry of Education are strongly recommended.

GAMES

At first most children find a sufficient element of play in the unexpected behaviour of a ball. As their skill grows they choose a more complicated situation by collaborating or striving one with another. They do not readily play group games which call for technical ability but rather practise different games skills individually with a chosen piece of apparatus, e.g., throwing, batting, dribbling, etc. Some six year olds, however, will play a rudimentary form of football or cricket in twos or threes. Although games, at this stage, do not

include 'sides' or 'teams', this is the time when, as a result of free play with bats and balls of various sizes, fundamental training in games skills begins. In addition, simple chasing games such as 'Frog in the Sea' often give much enjoyment.

By Primary 3 games skills including throwing, catching, aiming and dodging should be so developed that they can now be applied to simple games such as 'Chinese Wall' (P.P. page 62, No. 9), 'Free and Caught' (P.P. page 62, No. 3) and 'Dodge Ball in Threes' (P.P. page 64, No. 4).

In Primary 1 and 2 it is not always necessary to give a separate games lesson as sufficient attention can be given to games training as part of Basic Physical Education. Primary 3, however, will generally have one games lesson a week and this might be planned as follows:

(*a*) Introductory games, e.g., 'Tail Tag' (P.P. page 62, No. 7).
(*b*) Technique practice, e.g., bat and ball practice in twos freely or against a wall.
(*c*) Games, e.g., French Cricket in threes.

PRIMARY 4 to 7

Ideally, the Physical Education programme should include Basic Lessons, Dancing, Swimming and Games. The Basic Lesson is the most important of these, and the greater part of the time available should normally be devoted to this branch of the work. At this stage periods of either 30 minutes or 20 minutes can be used, but the older children will profit from the longer period if this can be arranged.

Although it is not essential at this stage to separate boys and girls for Basic Physical Education, better results are generally obtained when this is done.

The proportion of school time allocated to physical activity is very small in comparison with that devoted to more sedentary work. The need therefore to make good use of every minute of the Physical Education period and to satisfy the children's appetite for movement must be stressed. Time spent in reaching the hall or playground, in dressing, in changing shoes and in arranging the necessary apparatus must be reduced to the minimum. Those ready first should start practising on their own until the lesson proper begins and the work should be organised so that no time is wasted queueing for turns, in slow changes of formation or in long drawn out explanations. The value of the lesson may be assessed by the quality of the response, the speed and effectiveness of the organisation and the effort shown in a wide range of physical work.

BASIC PHYSICAL EDUCATION

Most children at this stage are nimble, and movement demanding control, dexterity and co-ordination has developed considerably. Tests of great strength or endurance are, however, beyond them. Now, before the rapid growth of adolescence begins, the majority show great agility and, given opportunity, can perform a wide variety of activities involving running, jumping, climbing, hanging by their arms or legs, rolling, tumbling and standing on their hands. Not only should they now be able to work in groups, but contests and practices in twos as well as supported jumps may be included among their activities. To be able to help children to improve in performance it is necessary for the teacher to have a critical eye where movement is concerned in order to observe faults and give constructive coaching. In this connexion Chapter Six of *Planning the Programme* is strongly recommended for study. The teacher should also observe closely what each child does during free practice and other periods when the pupils are on their own. Children will usually practise what they enjoy most and what they do with comparative ease; on the other hand, skills which do not come naturally tend to be ignored. Thus, the girl who finds ball work difficult may concentrate on skipping with a rope and the boy who has not mastered the co-ordination of skipping may always choose kicking and dribbling a football. Direction is required in varying degrees to ensure that, over a period of time, the training develops all parts of the body. For example, children who move awkwardly and lack spring need to practise activities which develop foot action; those who are slow and lethargic need to develop quicker perception and reaction, and those who tend towards stiffness should be encouraged to engage in activities which will increase their limited action and develop mobility and ease of movement.

Each lesson must be planned to suit the needs of the class and in the light of the facilities and equipment which are available. In setting down these lessons it is necessary to use a plan or framework. Some teachers may favour a framework which is based on anatomical considerations, but it is felt that this approach tends to develop isolated movement of various parts of the body as opposed to more natural comprehensive bodily action. Many teachers will use a framework of their own but, for those who need guidance, the following example is given:

(*a*) Introductory Activity.
(*b*) Compensatory Movements:
  (i) body movements;
  (ii) foot and leg movements.

(*c*) Skills and Agilities.

Each part of this framework is now considered separately:

(*a*) Introductory Activity should give a short period of continuous practice during which the children can accommodate themselves to the spaciousness of playground or hall. Often there is a great difference in temperature to which they need to adapt themselves and in cold weather this demands stimulating activity. New work should not be introduced at this stage of the lesson, nor should the children be asked to exert their maximum effort until they are well warmed up. The older children should be able to warm up quickly whether by means of free choice or of suggested activity, but the time taken for this part of the lesson will depend on the needs of the particular class and whether, for instance, it is taken out-of-doors on a cold day or in a heated hall.

(*b*) Compensatory Movements are those which are designed 'to compensate for the limitations imposed on growth and development by inadequate opportunities for movement, whether at home or in school, by ill-health or by unsuitable clothing'. The amount of compensatory work in any one lesson depends largely on the apparatus available; e.g., if all pupils have ample practice on climbing apparatus the need for compensatory arm and shoulder girdle movements is reduced, but compensatory foot and leg movements should be included if there is a lack of spring in running and jumping.

(*c*) Skills and Agilities call for extended effort in such activities as leaping, vaulting, climbing and games practices. To perform these successfully a high degree of skill and bodily strength and control are required, and it is now that the practices of the earlier part of the lesson involving different types of action and effort will be used.

This part of the lesson can be arranged in different ways. All pupils might work at practices leading up to one activity, such as leap-frog, each choosing a practice suited to his ability; or the class might be divided into groups each of which will concentrate on a different agility. Thus, one group might work freely on climbing apparatus, another practise jumping, a third balance on various pieces of apparatus and a fourth work at a games practice involving ball control.

CONTENT OF LESSONS

Suitable material may be obtained from *Physical Education in the Primary School*, Part Two: 'Planning the Programme' and other sources. For those teachers who wish to have more guidance as to

the stages of progression, the following scheme is suggested, based on the lists of material given at the end of this Chapter.

Suggested Scheme

Primary 4
Synopsis 1A and 1B, numbers 9 – 12
Synopsis 2A to 2H, numbers 9 – 12

Primary 5
Synopsis 1A and 1B, numbers 13 – 16
Synopsis 2A to 2H, numbers 13 – 16

Primary 6
Synopsis 1A and 1B, numbers 17 – 20
Synopsis 2A to 2H, numbers 17 – 20

Primary 7
Synopsis 1A and 1B, numbers 21 – 24
Synopsis 2A to 2H, numbers 21 – 24

In no class, however, will all pupils reach the same standard at the same time and, in using this scheme, allowance must be made for those who have little natural aptitude and may not improve at the same rate as the class as a whole, and also for the very agile whose progress will be more rapid. This scheme is not intended to be exhaustive. Many teachers will wish to include variations and additional material from other sources.

In smaller schools, where classes are combined, all the foregoing principles apply but it should be realised that there will be more variety of work in each lesson in order to cater for the wider age range. Most teachers will naturally take the whole class together for Introductory Activities and Compensatory Movements but, during 'group work', there will be ample opportunity to divide the children so that they may practise skills and agilities suited to their age and ability. (For suitable material see Scheme suggested above.)

DANCE

Dancing for this age group will be a continuation of the programme outlined for the younger children. The same general principles will apply but many children will, as they grow older, develop greater facility for expressive movement and their powers of sustaining an idea should increase. It will be found that more varied movements are being attempted and that the children are more ready to work in pairs and in small groups. As with the younger age group, dancing is concerned with the body as a whole and not only with the feet. A series of steps considered as footwork only, without regard to the

poise of the dancer as a whole, does not contribute to sound physical development, nor when portraying an idea or story will the dancing be of a high quality. Children should be encouraged to move as they wish and the teacher, while helping them to develop the expressive quality of their own movement, should refrain from imposing her own style. Walking, running, galloping, skipping and leaping are now practised quite happily and with more appreciation of pace and rhythm, and it is time to consider their further possibilities in the field of pattern and sequence. For instance, experimenting with such qualities as heavy and slow, light and swift, strong and broad, the children cannot avoid making shapes and patterns, whether large and free or small and limited, and these may well be the introduction to figure dances of all kinds. Figure dances should not be taught too soon – not before the children have had plenty of opportunity to explore less restricted types of dance nor before they have reached the stage of dancing easily with a partner. Great varieties of simple couple and group dances are to be found in the national dances of many countries, and a choice should be made from those which are based on simple technique and steps with which the children are already familiar. If these dances are regarded only from the point of view of the mechanical repetition of steps and patterns, they will lose much in quality. The important thing is how each dancer moves – whether he dances with ease and poise. Care should be taken to see that steps are not performed repeatedly in a slip-shod or careless manner. It should be remembered that, where advanced and complicated steps or rhythms are introduced too early, free spontaneous movement will disappear and the result will be strained, with loss of balance and co-ordination. In the case of dances which are built up on characteristic basic steps, e.g., Irish Side Step, it is essential that these steps should be well known before the dances containing them are taught.

Some teachers will wish to concentrate on one particular type of national dancing but the educational value of including the dances of a variety of countries should be considered.

For the benefit of those who wish to have some guidance on the build-up of a dancing lesson, the example given in *Planning the Programme*, page 23, paragraph B is suggested. Other types of lessons are given on pages 21 and 22 and are equally valuable.

GAMES

By Primary 4 most children can control a ball, and with this increase of skill together with greater speed and agility they show a readiness to collaborate in slightly larger groups and to play their part in a

team. They now take part in running, chasing and simple group games, such as Couple Tag (P.P. page 62, No. 2), Hit Partner with Bean-bag, Free Dodge Ball (P.P. page 64, No. 1) and Team Passing (P.P. page 65, No. 5). Easy game-like activities played in the early stages as games in themselves, e.g., throwing at a skittle or target, pat bouncing in twos, throwing a rubber ring over a rope, gradually become technique or skill training practised consciously as progressions towards more advanced games, such as Skittle Ball (P.P. page 66, No. 11), Arch Ball Rounders (P.P. page 68, No. 17), Hurly Burly (P.P. page 67, No. 14), Two Court Dodge Ball (P.P. page 67, No. 13) and Quoit Tennis (P.P. page 68, No. 18).

The need for the strong development of the group system should be stressed, so that the children may be accustomed to looking after themselves and playing on their own. In the smaller schools the group system makes it possible to cater for children of varying ages and ability. Most games and practices can be played in the playground where there should be sufficient space for two or three games to be played simultaneously with approximately seven-a-side. Those schools which have grass areas in addition to surfaced playgrounds should use them as often as possible.

Even at the top of the primary school children are not necessarily ready to play hockey, netball, cricket or football as understood by adults, but they will enjoy modifications of these games in small groups and on small pitches if too many rules are not introduced. They will need suitable light-weight equipment; e.g., hockey sticks should weigh about 17 oz. and vary from 29 in. to 31 in. in length. Although girls can be taught to play netball in Primary 5 and 6, it is doubtful if a game in which running is severely checked is suitable for children who are at the stage when running is more natural than walking. For boys football is the easiest game to start but the outstanding problem is helping the players to keep in their places, a problem much increased by a large heavy ball on a large heavy pitch, where the boys have not the strength to move the ball about freely. Progression should rather be as indicated above, from simple kicking games, very slowly to six- or seven-a-side on small pitches, or crosswise on an ordinary pitch. Care must be taken not to lose the play element; too much early training may kill enthusiasm but if the introduction of training is too long delayed the children will lose interest. The teacher must be aware that a certain amount of free play is necessary but if this is prolonged it may become purposeless and discouraging.

Even greater care is needed to avoid enforcement of adult standards in such games as cricket and hurling where a very high degree

of skill is required. There is still much room for experiment in introducing these games to children.

Planning a Games Lesson

To save time, courts and pitches should be marked out beforehand. Time can also be saved by explanation in the classroom particularly in the early stages.

Fundamental training in games skills will normally be included as part of Basic Physical Education, but more will be required in the Games Lesson. Too much time, however, should not be given to preliminary practices as the game is the main part of the lesson. For effective skill training, plenty of equipment must be available, including a small ball for every pair or a large ball for every four. The games must be organised so that every child gets his fair share of play and his position must be changed if the ball does not come his way often enough.

The following are examples of games lessons for children of this age group:

Primary 4:

Introductory: 'Shadowing.' This game is played in couples. One player runs, swerves and dodges to get away from his partner who follows (marks) him as closely as possible.

Practices: (*a*) Bouncing ball to partner who catches and throws back. (*b*) In twos, aiming practice at wood block or skittle.

Games: Circular or Three Court Dodge Ball (P.P. page 66, No. 12). (Three or four separate games.)

Primary 6:

Introductory: Running, dribbling a ball (feet or stick).

Practices: Team Passing in Fours – two against two (P.P. page 65, No. 5).

Games: (*a*) Running Tunnel Ball Relay (P.P. page 64, No. 5). (*b*) Skittle Ball (P.P. page 66, No. 11). Three separate games.

SWIMMING

Few facilities exist for the teaching of swimming and although a number of country schools have achieved remarkable success in rivers, lakes and the sea, there is much room for further enterprise in this direction provided that proper safety precautions are taken.

In general much more attention should be paid to swimming as an integral part of the primary school Physical Education programme. Its usefulness is of course obvious but as an additional field of Physical Education it has great advantages in that it entails activity in an entirely different element which often suits children unable to achieve satisfaction in other forms of movement.

Many good text-books are available which deal adequately with class instruction methods but some general matters need to be stressed. As much organisation as possible should be carried out at school so that all available time is spent in the water. The method of entry to and exit from the water can be explained and partners can be chosen. Some land drill is desirable as a preparation but it should not be given during the time water is available for swimming practice.

Most young children quickly gain confidence, provided the water is shallow. If it rises above the waistline the majority of children become nervous and the development of confidence is seriously handicapped, so much so that many teachers prefer water in which the pupils when lying flat can touch the bottom with their hands. In this position children have confidence and rapid progress can be made in actual swimming.

Once confidence and freedom have been established the ability to glide along the surface should be the next step, for gliding is the basis of balance required for all strokes. The decision whether to teach Breast Stroke or Crawl first is best left to the individual teacher. Provided confidence, freedom and ability to glide are well established, good progress should be possible with either stroke. Various floats can be used with advantage at this stage (and later) to assist stroke development, provided they are of a type which does not upset the balance of the body in the water. Very simple tests whereby each child may gauge his progress may be useful if used with care. They should deal in the first instance with establishing confidence and lead up from a few strokes to swimming, head first entry and diving. The tests must not be competitive nor should they require much time to perform or record.

Where facilities for regular swimming instruction do exist, priority should be given to non-swimmers if all pupils of a complete year cannot be included. The importance of regular, methodical instruction cannot be over-stressed and it must be borne in mind that, in the primary school, swimming is concerned with teaching non-swimmers to swim and be agile in the water, speed and endurance being the concern of the secondary stage.

For further details, see *Planning the Programme*, pages 23–24 from which this summary has largely been made.

SCHOOL SPORTS

Schools which run Sports or which take part in an Inter-schools Sports Meeting should encourage as many children as possible to

take part and not restrict the numbers to promising performers. In large schools, however, it may be necessary to run off heats prior to the actual Sports Day. The number of events in which each child takes part should be limited, to make it impossible for individual children to compete in too many final events. Preliminary training for Sports is desirable as it must be remembered that a Sports Day involves much excitement and all-out physical effort which can be exhausting. Practices for the different events may with advantage be given in the Basic Physical Education lesson (Skills and Agilities) as it is important that correct style and ease of movement should be developed. Flat races should be relatively short and graded according to age and ability. A 60 yards race is suggested for nine year olds. Throwing events can be simple, e.g., using a tennis or cricket ball or bean-bag. A pit filled with sand and a safe approach and take-off are essential for competitive High and Long Jump. Other less standardised events may be included in order to give a wider choice. Games practices such as dribbling, goal shooting, distance kicking and hitting, and skill practices such as skipping on the spot or running forward can well be used.

Much of the success of a Sports Day depends on preliminary planning and on the effectiveness of the organisation. The proceedings should be short and it is suggested that the older children should be allowed to help in as many ways as possible, and that all pupils should know the order of the events and be responsible for getting into position for their own events on time. The award of individual prizes should be avoided and trophies, if used, should be given only on the results of team contests.

SYNOPSIS OF ACTIVITIES

1. *Compensatory movements*
   - A. Body Movements.
   - B. Foot and Leg Movements.
2. *Introductory activities; skills and agilities*
   - A. Walking, Running and Leaping.
   - B. Skipping.
   - C. Jumping.
   - D. Tumbling.
   - E. Ball-Handling.
   - F. Handstands and Cartwheels.
   - G. Supported Jumps, Leap-Frog and Through Vault.
   - H. Contests.

SUGGESTED SCHEME

Class	*Activities*
Primary 2	2A – 2F, 1 – 4
Primary 3	2A – 2G, 5 – 8
Primary 4	1A and 1B, 9 – 12
	2A – 2H, 9 – 12
Primary 5	1A and 1B, 13 – 16
	2A – 2H, 13 – 16
Primary 6	1A and 1B, 17 – 20
	2A – 2H, 17 – 20
Primary 7	1A and 1B, 21 – 24
	2A – 2H, 21 – 24

ACTIVITIES

For the convenience of teachers the graded lists below are numbered in such a way that the numbers 1 to 4 always refer to Primary 2, the numbers 5 to 8 to Primary 3, and so on. The lists of some activities do not begin at number 1 since it is not desirable that the younger children should be directed to engage in specific exercises in these particular activities.

1A: *Body Movements*

9. (*a*) Standing: kick hand held at shoulder height.
   (*b*) Sitting, bean-bag on ground: bend down to touch bean-bag with forehead.
10. (*a*) Standing astride: push bean-bag between legs as far as as possible; then turn and recover it without moving feet.
   (*b*) Sitting, bean-bag between feet: throw it up and catch it.
11. (*a*) Stretching up as high as possible, drop bean-bag in front or behind; bend down and pick it up without moving feet.
   (*b*) Kneeling, hands on ground: hollowing and rounding the back (P.P. page 40, No. 83).
12. (*a*) Holding hoop upright on ground, step through it without touching it with body.
   (*b*) Facing partner: join hands, and circle and turn under raised arms ('Coffee Grinding').
13. (*a*) Standing astride on a straight rope: bend sideways as far as possible to touch alternate ends.
   (*b*) Lying on back or side: curl up and stretch out as far as possible (P.P. page 38, No. 66).
14. (*a*) Standing astride: bounce ball through legs from back and catch in front (P.P. page 43, No. 108).

(*b*) Sitting, hands on ground at sides: raise body on feet and hands. Later, 'walk' forward, backward, sideways.

15. (*a*) Holding folded rope with hands shoulder-width apart: step over and pull rope up behind back and overhead. Later, with hands closer together.

(*b*) Kneeling with hands on ground: 'walk' hands round to heels, alternate sides (P.P. page 41, No. 90).

16. (*a*) Standing: revolve hoop round body (P.P. page 44, No. 112).

(*b*) Kneeling with hands on ground: reach under one arm as far as possible with other arm, to alternate sides. Later, roll over to lie relaxed on back (P.P. page 41, No. 95).

17. (*a*) In twos, facing each other and holding opposite ends of two sticks or folded ropes: make circles and turn under (P.P. page 43, No. 107).

(*b*) Kneeling with hands on ground: pull knee to forehead, then raise leg upwards, arching the back (P.P. page 40, Nos. 84 and 85).

18. Standing astride: swing folded rope to make as large a circle as possible at alternate sides of the body, forming figure of eight.

19. (*a*) Standing astride, arms sideways, bean-bag in one hand: drop it and catch with opposite hand.

(*b*) Lying on back, hoop held upright on chest: lift legs through hoop; pass top of hoop under body and overhead to starting position.

20. Standing astride with body relaxed downwards: swing arms from side to side with knee-bending and brushing floor with hands (P.P. page 47, No. 128). Gradually increase the swing.

21. Standing astride: pat bounce ball round body; twist to other side to continue pat bouncing with other hand (P.P. page 42, No. 96).

22. (*a*) Kneeling with hands on ground: 'walk' hands round to heels; swing one arm and then the other overhead to continue hand-walking on opposite side.

(*b*) Lying on front holding a bean-bag: raise head and shoulders; throw bean-bag forward and upwards to a partner (P.P. page 39, No. 74).

23. Standing with one arm held loosely forwards: body and knee-bending to brush floor at side with arm-swinging and trunk-raising to bend backwards (P.P. page 46, No. 124).

24. Standing with folded skipping rope held in front with one hand: keeping end of rope on ground, draw it round the body making as wide a circle as possible.

1B: *Foot and leg movements*

9. Hopping with rebound from side to side over line or rope stretched on ground.
10. Running on the spot
    (*a*) with ankle stretching;
    (*b*) kicking legs backward;
    (*c*) with high knee raising.
11. Hopping, holding one foot in front or behind.
12. Knee-springing, singly or with a partner (P.P. page 37, No. 58).
13. In twos, sitting back to back with knees bent: push to standing.
14. Hopping (*a*) with leg-lifting forward;
    (*b*) tapping the ground with heel or with toe.
15. (*a*) Skip-jumping with rebound, lifting both knees as high as possible.
    (*b*) Sitting: alternate ankle circling.
16. (*a*) Astride jumping and foot crossing with rebound.
    (*b*) Continuous change of step, moving forward.
17. Crouch position, with one leg stretched backwards: leg-changing with a jump.
18. Hopping with leg swinging sideways.
19. Changing from astride standing to crouch position with a spring.
20. Kneeling with hands on ground: leg-stretching in all directions, each leg in turn.
21. Standing with hand support at wall or with partner
    (*a*) knee-circling, each knee in turn;
    (*b*) leg-swinging in all directions, each leg in turn (P.P. page 35, Nos. 45 – 49).
22. Crouch position, hands on ground: leg-stretching sideways with jump, each leg in turn.
23. (*a*) Running and hopping over a low object (landing on take-off foot).
    (*b*) As above, with quarter turn in air, landing softly with hands on ground (Preparation for Western Roll).
24. In twos, with inside hands joined: continuous running, A to pull B to opposite side, changing hands.

2A: *Walking, running and leaping*

1. (*a*) Free running: changing to running 'hard'.
    (*b*) Free running: steering a car or aeroplane.
    (*c*) Hoops flat on ground, running to get through as many as possible.

2. (*a*) Hoops flat on ground: running and swerving in and out.
   (*b*) As (*a*) but, on signal, running and jumping into a hoop before being caught.
3. In pairs: 'Horses and Drivers' with rope or hoop as reins.
4. (*a*) Bowling a hoop.
   (*b*) Walking on toes and heels.

5 and 6. Running activities, using balls, bean-bags, ropes, etc.

7. (*a*) Free tag (P.P. page 62).
   (*b*) Couple tag (P.P. page 62).
8. In twos: A to walk in any direction making pattern while B runs around A as often as possible.
9. Running through a large rolling hoop as many times as possible before it falls (P.P. page 48, No. 135).
10. (*a*) Running and bounding (P.P. page 50, No. 142).
    (*b*) Running and stopping suddenly standing on the toes or on one foot.
11. (*a*) In fours: three try to encircle one.
    (*b*) 'One against three' (P.P. page 62, No. 8).
12. (*a*) Running round a spinning hoop (P.P. page 48, No. 133).
    (*b*) In twos: spin hoop and run to catch partner's (P.P. page 48, No. 134).
13. Running leap with arm-swing overhead (P.P. page 49, No. 137).
14. In twos: shadowing. A to dodge and swerve to get away from B who tries to mark closely.
15. In twos, each holding a hoop and facing the other: reverse spinning and running to catch partner's hoop (P.P. page 49, No. 136).
16. (*a*) Slipping-step sideways.
    (*b*) As (*a*) but making half turn and continuing in same direction.
17. High step-hopping with free arm swing.
18. Running leap, to click heels in any direction (P.P. page 49, Nos. 139 and 140).
19. Running leap, turning in the air (P.P. page 49, No. 138).
20. In twos, facing with hands joined: slipping-step sideways, changing direction frequently.
21. In twos, with inside hands joined: barn dance step (1, 2, 3, hop).
22. Free running, gradually increasing and decreasing the amount of spring.
23. Running jump, either to land in crouch position, or high to tuck knees to chest.

24. In twos, hands joined
    (*a*) slipping-step clockwise and counter-clockwise, changing direction at will;
    (*b*) as above, changing direction every two steps.

2B: *Skipping*

1. Skipping-step freely (without a rope).
2. Gallop-step freely (without a rope).
3. Gallop-skipping with a rope.
4. Skipping with a rope on the spot.
5. Skip-jumps on the spot (without a rope).
6. Skipping on the spot using skip-jumps.
7. (*a*) Zig-zag skip-jumps, moving forward over a rope stretched on the ground or a line.
   (*b*) Holding folded rope in one hand: swinging it in circle under own legs and jumping over it.
8. In threes: two swaying rope to and fro while third runs and jumps over it, timing the sway.
9. Individual skipping on the spot turning the rope (*a*) forwards; (*b*) backwards.
10. Holding ends of folded rope: standing-jump, passing rope under legs.
11. In threes
    (*a*) running through the turning rope;
    (*b*) running in and skipping;
    (*c*) running through rope and round partners forming a figure of eight.
12. Individual skipping with a hoop.
13. (*a*) In threes: running and jumping the turning rope ('Over the Moon').
    (*b*) Combine nos. 11(*a*) and 13(*a*), i.e., alternately running under and jumping over a turning rope.
14. (*a*) Running forward turning own rope.
    (*b*) As (*a*), turning in small space to change direction.
15. Individual skipping on the spot, turning rope forwards and backwards alternately.
16. Individual skipping, (*a*) crossing the rope;
    (*b*) circling the rope to right and left.
17. Partners side by side skipping in one rope. (Each holding rope with outside hand, with other arm around partner's waist.)
18. In threes: centre one to run and skip while partners run with her, turning the rope.

19. In threes: two turn rope while the third skips, touching the ground with hands every fourth or fifth jump.
20. Individual skipping with a rope, changing speed – slow, quick, accelerating.
21. In twos: one skips turning rope while the other runs in to skip with her.
22. In fours: two turn a rope, another skips while catching and throwing a ball passed by the fourth, who stands in front.
23. Individual skipping with a rope, introducing a variety of steps, e.g., alternate knee lifting, foot crossing with a rebound, *pas de bas*.
24. Individual skipping with a rope, running backwards and forwards making different patterns.

2C: *Jumping*

1. Giant Strides (P.P. page 50, No. 145).
2. (*a*) Jumping from a height (bench, box, etc.) (P.P. page 52, No. 157).
   (*b*) Jumping over low object (wood block, or cane balanced on low supports).
3. Jumping over a series of low objects (ropes, canes, etc.).
4. Jumping over spaces (chalk lines, mats, etc.).
5. Frog-jumps:
   (*a*) into circles;
   (*b*) over low objects (P.P. page 50, No. 144).
6. (*a*) Running: jumping high and landing in crouch position.
   (*b*) Run, jump over low object and land in crouch position.
7. In twos: running and jumping into hoop held horizontally by partner and crawling out underneath without touching the hoop (P.P. page 41, No. 87).
8. Jumping from height (box, table, steps, etc.) and landing with full knee-bending.
9. (*a*) Running up inclined bench or plank, and making high jump off.
   (*b*) As above, but jumping off over rope (P.P. page 53, No. 162).
10. 'Jumping the Snake' (P.P. page 51, No. 151).
11. (*a*) Standing long jump (P.P. page 50, No. 143).
   (*b*) Standing jump over rope or stick.
12. Holding bean-bag between feet: jumping and throwing it in various directions, individually, or in twos with one throwing and the other catching (P.P. page 36, Nos. 54 and 55).
13. Jumping the swinging rope.

14. Jumping widening stream (P.P. page 50, No. 146).
15. Star-jumps and strike-jumps (Jumping with leg parting and heel clicking).
16. Star-jumps over a rolling hoop (P.P. page 50, No. 147).
17. Running 'Window' Jump through large hoop or between poles (P.P. page 52, No. 155 and Plate 13).
18. Oblique high jump (P.P. page 51, No. 153).
19. Oblique high jump over a rolling hoop (P.P. page 51, No. 148).
20. Running and jumping a series of high obstacles.
21. Jumping the weighted rope (P.P. page 52, No. 154).
22. Running 'fence and ditch' jump (P.P. page 51, No. 152).
23. Running high jump over a rolling hoop (P.P. page 51, No. 149).
24. Crow hopping along a bench with 'Jack in the box' jump off the end (P.P. page 52, No. 158).

2D: *Tumbling*

1. Sitting with legs crossed: twisting and bending to touch one knee with opposite ear.
2. Sitting, hugging knees
   (*a*) roll backwards and forwards;
   (*b*) roll anywhere.
3. Lying on back: bicycling.
4. Lying on back holding braid with both hands: 'Thread and unthread the needle' (P.P. page 38, No. 64).
5. Lying on back
   (*a*) lifting legs over head to touch floor with toes (P.P. page 38, No. 69);
   (*b*) gripping bean-bag between feet, dropping it overhead and recovering it.
6. Standing astride: reaching as far as possible between legs for a bean-bag or other object.
7. Forward roll (P.P. page 29, Nos. 25 and 26).
8. Jumping from box, chair or other apparatus, landing with a forward roll.
9. Running forward roll, with a take-off from both feet.
10. Sitting: backward roll, keeping knees bent (P.P. page 56, No. 177).
11. Running, jumping low rope or cane and landing with a forward roll.
12. Two or more consecutive forward rolls.
13. Backward roll from crouch position.
14. Forward roll followed by backward roll.

15. 'Tipping the Wheelbarrow' (P.P. page 56, No. 175).
16. Sitting with knees bent (or legs crossed): rolling backward and forward to standing position (P.P. page 40, No. 80).
17. Backward roll from standing position.
18. 'Dive' forward roll over low obstacle (P.P. page 56, No. 176).
19. Handstand with partner to support: forward roll (P.P. page 57, No. 182 – shown without support).
20. In threes: alternate forward rolls and star-jumps under and over one another.

21 – 24. Voluntary practice of numbers 16 – 20 to improve performance.

2E: *Ball-handling*

1. (*a*) Throwing into the air and catching (ball or bean-bag).
   (*b*) Bouncing a ball and catching.
2. Throwing for length or height (ball or bean-bag).
3. Kicking a ball.
4. (*a*) Pat bouncing.
   (*b*) In twos: one child pat bouncing while partner tries to gain possession of ball.
5. Throwing and catching while walking.
6. Kicking a ball against a wall.
7. Batting a ball into the air and taking it on the bounce.
8. Rolling a ball, aiming at a skittle.
9. (*a*) In twos: throwing and catching (underarm and overarm).
   (*b*) In twos: bouncing and catching (overarm).
10. Nos. 9 (*a*) and (*b*) against a wall.
11. Throwing high and jumping to catch.
12. Keeping the ball moving in the air by hitting it with the hand or small bat.
13. Dribbling.
14. (*a*) Bouncing a ball hard and jumping to catch.
   (*b*) In twos: bouncing hard and running to catch partner's ball.
15. In twos, each with a ball
   (*a*) throwing across to partner;
   (*b*) bouncing across to partner.
16. (*a*) In twos: batting a ball to partner and taking it on the bounce.
   (*b*) In twos: batting a ball against a wall and taking it on the bounce alternately.
17. Overarm and underarm throwing, aiming at a skittle or wall target.

18. Heading a ball in ones, twos or threes.
19. In twos, each with a bat: volleying practice.
20. In twos or threes: shoulder-pass (girls) or soccer throw-in (boys) with large ball.
21. In twos: fielding practice.
22. In twos: overarm throwing for length and catching.
23. Juggling with two or more balls, or trick throwing.
24. (*a*) In twos: throwing and catching a quoit over a rope or net.
    (*b*) In twos: one child throwing quoit and partner catching it on a stick.

2F: *Handstands and Cartwheels*

1. Walking and running on all fours – freely.
2. Crab Walk (walking sideways on all fours).
3. Crouch-jumps on the spot and moving forward.
4. Running and jumping into hoop on the ground; crouch-jumping out.
5. In threes: crouch-jumping over a rolling ball.
6. Crouch-jumps with variations
   (*a*) Gripping bean-bag between feet;
   (*b*) As (*a*), but tossing bean-bag overhead.
7. Crouch-jumping through hoop, over rope or cane (P.P. page 54, No. 169), and on and off box or bench.
8. 'Kicking Horses' (P.P. page 56, No, 178).
9. Hands on ground, moving feet up wall.
10. Crouch-jumping with partner to support hips.
11. 'Wheelbarrow' with partner to support
    (*a*) moving forward;
    (*b*) stepping over low obstacles.
12. Crouch position with one leg stretched backwards: swinging leg upwards and gradually increasing height.
13. No. 12, with partner to assist by supporting hips.
14. Handstands with partner to support (P.P. page 56, No. 179).
15. Handstands against a wall (P.P. page 56, No. 180).
16. Handstands against a wall, transferring weight from one hand to the other.
17. (*a*) Cartwheel over mat or space (P.P. page 57, No. 183).
    (*b*) Cartwheels in succession.
18. Handstands without support.
19. Handwalking with, or without, support.
20. Handspring assisted by two kneeling supports with hands joined.

21 – 24. Revision of numbers 14 – 20 to improve performance.

2G: *Supported Jumps, Leap-Frog and Through Vault*

5. 'Caterpillar Walk' (P.P. page 41, No. 88).
6. In twos: crawling under different 'arches' made by partner.
7. On 'all fours': walking on wood blocks, tins or other 'stepping stones'.
8. Crouch jumps
   (*a*) from side to side over a low rope;
   (*b*) up an inclined bench or plank.
9. Crouch jump from side to side, with hands supported on bench or partner's back (partner kneels with hands on ground).
10. Crouch jump through a rolling hoop.
11. Jumping with a pole over spaces and low objects (P.P. page 52, No. 156).
12. Catsprings
    (*a*) over various objects;
    (*b*) through two hoops held vertically;
    (*c*) along a bench (P.P. page 55, Nos. 170 and 172).
13. Hands supported on partner's back, desk or platform: jumping with leg parting and rebound.
14. No. 13 with an approaching run and take-off with feet together.
15. In threes: two support pole at shoulder level, third faces the pole and, grasping it with hands shoulder-width apart, by moving his feet forward changes from knees full bend to hanging position with body straight.
16. In threes: leap-frog, with partner to support if necessary (P.P. pages 27 and 28).
17. In twos: supported upward jump from side to side over a rope.
18. In twos: supported upward jump with leg parting (P.P. page 53, No. 165).
19. In threes: upward jump (P.P. page 53, No. 164).
20. In threes: upward jump with knee lifting to chest.
21. Through vault (P.P. pages 29 and 54).
22. In threes with two poles: two hold the ends of the parallel poles on their shoulders while the third grasps each pole and lifts legs to hold in 'Monkey Grip'.
23. In threes: supported running jump over a rolling hoop or other low object (P.P. page 54, No. 166).
24. As No. 23, but leaping a wide space.

2H: *Contests*

9. One- or two-handed Tug-of-war (P.P. page 59, No. 194).
10. Tug-of-war with knees fully bent (P.P. page 59, No. 195).
11. 'Turning the turtle' (P.P. page 59, No. 199).

12. Tug-of-war with elbows linked (P.P. page 57, No. 187).
13. Four-cornered Tug-of-war (P.P. page 59, No. 196).
14. 'Poison' (P.P. page 59, No. 198).
15. Pushing, hands on partner's shoulders (P.P. page 60, No. 203).
16. 'Duck fighting.'
17. Pushing, with straight arms, palms against partner's.
18. 'Chinese boxing' (P.P. page 60, No. 202).
19. Knee boxing (P.P. page 60, No. 201).
20. 'Obstinate Wheelbarrow' (P.P. page 44, No. 113).
21. 'Obstinate Calf' (P.P. page 60, No. 200).
22. 'Arm-lock Wrestle' (P.P. page 60, No. 204).
23. In twos: trying to get behind partner.
24. In twos: trying to lift partner.

Physical Education Equipment

1. *Balls*
   (*a*) Inflated balls 3 in. in diameter: one per child in largest class.
   (*b*) Large balls, approximately 8 in. in diameter: one for every 6 children in largest class.
   (*c*) Two netballs and/or footballs.
2. *Bean-bags*
   Approximately 5 in. x 4 in.: one per child in largest class.
3. *Ropes*
   (*a*) Short: one per child in largest class (half the number 7 ft. and the other half 9 ft.).
   (*b*) Long: two 21 ft.
4. *Hoops:* One for every two children in the largest class: one-third 36 in. diameter, one-third 24 in., one-third 18 in.
5. *Bats:* One for every three children in largest class, some of table-tennis type, some of flat rounders type.
6. *Wood Blocks:* One dozen in various colours, measuring approximately 12 in. x 4 in. x 4 in.
7. *Skittles:* Four in different colours 24 in. in height. Base approximately 4 in. square, tapering to 2 in. square at the top.
8. *Rubber Quoits:* Four to six.
9. *Canes:* 3-foot canes or sticks: one for every two children in class.
10. *Coloured Bands:* One per child in largest class, in four different colours (42 in. of braid required for each band).

Note: In schools where two Physical Education classes are frequently conducted at the same time it will be necessary to duplicate the equipment listed under items 1 to 10.

In larger schools the following additional equipment is desirable:

11. *Poles:* 6 – 12 strong poles at least 5 ft. in length.
12. *Mats:*
    (*a*) Individual mats 36 in. x 24 in. for use on unsuitable floors or on playgrounds: one per child in largest class.
    (*b*) Large mats for tumbling, etc., approximately 5 ft. x 4 ft.
13. *Jumping Stands and weighted rope.*
14. *Balancing Benches:* Two.
15. *Climbing Apparatus:* For suggestions see *Planning the Programme*, plates 1 – 13 and pages 8 and 9.

The list of items 1 to 15 is not intended to be exhaustive; those schools which give periods for games may require additional games equipment.

Storage

All the equipment should be accessible to all classes and articles such as balls and ropes should be kept in separate containers which can be carried by the younger children. At the end of each lesson equipment should be carefully checked and left tidily for the next class or replaced in the store.

Chapter IX

MUSIC

PRIMARY 1, 2 and 3

Music is an essential part of the curriculum at all stages of the child's development. In Primary 1, 2 and 3, it should, if possible, be taken daily; it is suggested that if 90 minutes weekly is assigned to music, 15 minutes on each of four days and 30 minutes on the fifth may be found a suitable distribution. The aims of the teaching should be to develop in children a love of music, the ability to sing softly and in tune, and the capacity to enjoy listening to music. The music lesson should take place in an atmosphere of spontaneous enjoyment and happiness and no formal work need be attempted. By formal work is meant such things as breathing and voice production exercises and the introduction of notation. These are better left until the physical and mental development of the child makes their introduction easier and more effective. It is regarded as important that at this early stage the music should be taken by the class teacher, who should be suitably trained and able to undertake this work. Pianistic or other instrumental ability is a great advantage.

SONG SINGING

Song singing is the main activity of the primary school at this stage and all children should be encouraged to participate. The child should leave Primary 3 with a knowledge of many suitable songs. These should be carefully chosen, attention being paid to:

(*a*) range of melody, which should normally not go below middle C or higher than E, a tenth above;
(*b*) words, which should be clear in meaning;
(*c*) sentiment, which should be healthy;
(*d*) length of phrases and of complete song, both of which should be short; it is better to teach many songs with a few verses than to teach a few songs with many verses.

Songs with refrain, in which the teacher sings the verses and the children sing the refrain, can be used to good purpose. It is necessary to state that not all folk songs are suitable for use at this stage. Suitable songs by contemporary composers should not be overlooked.

Some songs can be introduced without any preliminary explanation by the teacher; with others, it is better to tell the story first. In either case, the teacher should sing the song at least twice before the

children attempt it. The song should then be taught phrase by phrase or line by line. Usually it is better to teach the music and words together but sometimes it may be found easier to separate the two and teach the music first.

It is important that children should be taught musical discipline; when singing they should start together, keep together rhythmically and finish together. To secure this, the teacher, before asking the children to sing a song which they have been taught, should herself sing at least the first line; this will indicate the tonality of the key, the note upon which the song starts, and the speed at which it is to be sung. (Care should be taken not to pitch the song too low; where there is no piano the use of a pitch-pipe or a tuning-fork is necessary.) The children should begin to sing in response to a gesture from the teacher, and the song should be directed with sincerity and feeling. Since the teacher need rarely sing *with* them songs which they know well, she will be able to listen critically to the singing of the group.

Nursery rhymes are an important feature of the work and traditional songs and 'finger plays' should be used. The old type of action song in which the actions were dictated merely by a particular word is unsuitable. Actions, if any, should grow out of the general sense and mood of the song and should not be imposed by the teacher.

Singing games are a combination of music, mime and movement and may be used in the school where space permits, or else in the playground. In simple song dramatisation the children should be encouraged to devise their own interpretation and so learn to express their own individuality through this art form.

Finally, the teacher should have a repertoire of songs for singing to the children. In the same way as she reads to children poems which they are not required to memorise, so the teacher should sing songs. This will be pleasurable to the children and a valuable training in the art of listening.

PRIMARY 4 to 7

SONG SINGING

Breathing

Correct breathing is the basis of expressive singing. When singing the children should be trained to stand in a perfectly natural posture, with the whole body relaxed, and their minds should be directed not so much to the mechanics of breathing as to the quality of their achievement.

The important thing about breathing-in is that the breath shall be deep, so that its exhalation can be controlled by the diaphragm and the abdominal muscles; and the children should not be allowed to raise their shoulders. If breathing exercises are used it is advisable to make them vocal exercises as well. There is little point in asking children to breathe in, hold the breath, and then breathe out, since the exhalation in this exercise is not the same as it is in singing. Having taken in the breath, the children should exhale on a monotone by singing the letters of the alphabet or a series of numbers or a line of poetry. In this way they will learn how to control their breath vocally; care should be taken not to put them under strain. The children should then be taught that a breath must not interfere with the sense of the words, nor spoil the shape of a musical phrase by breaking it at any point, though there are occasions when a relaxation of this rule has to be conceded.

Voice Production

Voice production exercises for children may be confined to the following:

(*a*) *The development of the head voice.* Children can be taught to 'place' the head voice by being asked to hum a high note and then open the mouth until the vowel sound 'Ah' appears. The object of the voice production exercise then becomes to develop the head voice downwards. Only the descending scale should be used and not the ascending scale which encourages the forcing of the chest voice upwards. Forcing the breath on the lower notes should not be permitted; this spoils the quality of the sound and may injure the voice. Teachers should use a variety of vowel sounds with a variety of consonants before them, and should not be afraid to use high notes. In singing high notes girls tend to squeeze them out, whilst boys tend to force them out. The girls should be encouraged to give such notes a little more breath support and the boys to let the breath float.

(*b*) *The production of good forward tone and pure vowel sounds.* The production of good forward tone is of the utmost importance, since correct use of the lips, the teeth and the tip of the tongue is necessary for clear articulation. It follows, therefore, that any kind of backward production is bound to be inconsistent with good articulation. To produce the sound correctly, the children should therefore be taught to direct it upward and forward to the front of the mouth.

Purity of vowel sounds should be insisted upon. Whilst it is true that there are differences in vowel sounds between one dialect and another and that no one wishes to see dialect disappear, yet it is also true that in song a pure vowel sound is more beautiful than an impure one; for example, a pure 'OO' sound is better than the thin 'U' sound which it sometimes becomes. Exaggerated movements of the lips and lower jaw should be discouraged.

Good breathing and forward tone having been secured, the time devoted to voice production exercises as such can be curtailed. The so-called exercises aimed at securing good attack, rapid articulation, realisation of mood, etc., need not be used, since all these can be taught equally well, if not better, in actual song singing. Voice production exercises are of use only in so far as they teach children to vocalise properly in song; to insist on certain standards in an exercise and then to allow children to sing with a complete disregard of these same vocal standards is to negative whatever may have been accomplished. To develop in children a critical appreciation of what they are producing, the use of antiphonal singing is strongly recommended.

Common faults in children's singing

The most common faults are:

(*a*) A thin quality produced by allowing the tongue to arch up at the back of the mouth. The tongue should lie quite naturally in the mouth and should be kept flat except when its tip has to rise to produce certain of the consonants.

(*b*) Tightness in the throat. The throat should be completely relaxed so as not to impede any movement of the larynx.

(*c*) Forcing the breath. Forcing the breath has already been mentioned together with the use of the word 'float'; it is a good idea to let children visualise their breath as a cushion of air upon which the voice rests.

(*d*) 'Breathy' tone. Breathy tone is caused by the escape of a certain amount of air which is not being used in the production of tone. It is easily recognised and can be cured only by making vocal use of all the breath. There should be very little sensation of air leaving the mouth, even in a passage sung *forte*.

(*e*) Nasal tone. Nasal tone is caused by overuse of the resonance which can be obtained from the nasal cavities; this can be cured by insistence on good forward tone produced from an open throat.

The treatment of children who cannot sing in tune

The teacher cannot help the children who are unable to sing in tune unless she understands the nature of the problem. Briefly, the child finds difficulty in controlling his voice for one or more of the following reasons:

(*a*) A faulty ear, i.e., inability to differentiate between sounds of varying pitch. A very small minority suffer from this defect.

(*b*) Inability so to co-ordinate the vocal organs as to be able to reproduce a sound which the ear nevertheless hears correctly. The majority fall into this category.

(*c*) Psychological and background reasons – e.g., the child may attempt to vocalise at the lower pitch at which he hears his father singing, or he may come from an unmusical home.

(*d*) Shyness and diffidence about the act of vocalising – a large number of boys are in this category at first.

(*e*) Physical mal-construction, which is not a case for the teacher but for the speech therapist.

In no circumstances should these pupils be segregated from the rest of the class, nor should the term 'non-singer' be used. The aural training mentioned elsewhere will help the children whose ear is at fault. After that the problem is one of building up their confidence in their ability to sing; they will respond to sympathetic encouragement. It is suggested that while the rest of the class sing these pupils should be encouraged to hum the tune; having had some experience of this they should be led on to vocalising the tune to a vowel sound. In both these activities the mind and the voice are being concentrated on the production of the tune without the encumbrance of the words. Little by little the children's confidence can be built up until they can tackle the song with the words. Many will respond to sympathetic encouragement at an early age and it is imperative that the treatment be not delayed too long, since the older the child becomes the more difficult it is to effect a cure.

Interpretation

Song singing is good speech beautified by music. It is important that the teacher's habits of personal speech should be above reproach. Given this, together with enthusiasm and an imaginative conception of the beauty of words, any teacher is capable of producing good results. The teacher with a good voice has of course an advantage, since children will learn far faster by imitating a good model. The teacher who cannot sing well should use the best child in the class as a model. She must develop in herself the faculty of

listening critically to what the children are doing, so as to be able to correct faults in production and articulation. The two great enemies of good articulation are lip laziness and jaw immobility. These faults prevent the children from articulating clearly and without clear articulation the song lacks intelligibility. Particular attention should be paid to final consonants; all children think of the initial consonants, since that is where the voice starts, but many forget the final consonant, so that a word like 'wake' becomes the word 'weigh' and the meaning is lost.

It is essential that children should understand what they sing. Without this understanding, an expressive and satisfying interpretation of a song can not be achieved. As the children develop, the scope of the songs and their emotional content can and should be extended.

Every song has its own atmosphere. It is the teacher's conception of the song as a whole which is the secret of successful interpretation. The children should be led to appreciate the mood of the song, for it is this appreciation of mood which will give the song its particular tone colour and invest the words with their real significance. To sum up: Realise the atmosphere of the song; visualise it as a whole; sing it so as to convey its meaning.

Choice of songs

Before teaching a song the teacher should ask herself the following questions:

(*a*) Is the tune a good tune within the compass of the children's voices at the particular stage of their vocal development? A diatonic tune is more likely to be suitable than a very chromatic one.

(*b*) Are the phrases of suitable length for the children's breath capacity? (The teacher will be surprised at the length of phrase children *can* sing if they have been taught to do it naturally and are not afraid.)

(*c*) Has the tune good rhythmic interest?

(*d*) Has the tune varied harmonic interest? (This is a consideration mainly for pianists.)

(*e*) Is the language good; is it capable of being understood as a whole; is it healthy in sentiment?

(*f*) Is there a fairly close relation between the rhythm of the words and the rhythm of the music? (In this connexion, a song like 'Fairest Isle' should not be ruled out, since the peculiar accentuation here has an historical significance.)

When considering the suitability of songs, teachers should at all times remember their responsibility for the formation of taste in the years when the children's minds are most impressionable.

Part singing

It is impossible to lay down any hard and fast rule when part singing should be introduced. It entirely depends upon the quality of the teaching and the capabilities of the class. It is true to say, however, that children will never sing easily and securely in two parts until they can think independently in two parts. When children have achieved fluency in reading from the modulator the teacher can start part singing by dividing the class and pointing two tunes, phrase by phrase, on the modulator simultaneously, one half of the class singing the upper tune and the other half singing the lower tune. Rounds and canons can be useful in teaching children to sing in parts, providing they are taught to *hear* the other parts and are not allowed to close their ears to what the other children are doing.

Whilst it is desirable that children should be taught to sing in parts, there is little doubt that if the teacher finds part singing a drudgery then the children will find it so too. In such circumstances, part singing should not be attempted.

The School Choir

In the larger schools, a special choir of selected voices should be formed and should be given extra opportunities for regular rehearsals. Compulsory participation should be avoided; the children should be selected because of the quality of their voices and their special interest in music. The object of the School Choir is then to set before the rest of the school standards of performance and models of perfection at which to aim. The School Choir can also be a very useful adjunct to the school's acts of corporate worship.

SIGHT READING

Phase I

Sight reading should begin in Primary 4. Tonic Sol-Fah names should be used, but Tonic Sol-Fah notation should not be taught, since it bears no relation to what the children have later to learn about Staff Notation; the aim is to make children fluent in reading from Tonic Sol-Fah names written vertically on the blackboard. Tonic Sol-Fah is an invaluable aid in teaching children to hear a note mentally before singing it, and the groundwork of Tonic must be firmly consolidated before the introduction of Staff Notation.

When the children have been given the names of the Tonic Sol-

Fah scale, it is suggested that a beginning might be made with practice in singing and recognising the differences between the first three notes, Doh, Ray, Me. When a degree of fluency has been achieved Fah and Soh should be added and, similarly, at a later stage, Lah, Te and high Doh. Whilst it is a desirable policy in the early stages to use a good deal of stepwise movement, the more common leaps should be introduced naturally and easily. Diagrammatic illustrations on the blackboard are a help in visualising the rise and fall of a tune. The children should never be allowed to lose sight of the fact that they are making real music and engaging in a pleasurable adventure.

It is important that whatever the teacher does with Tonic Sol-Fah should be done in a musical fashion and for this reason all exercises should have musical shape with cadences and points of rest; it is recommended that these exercises should be short.

The excessive use of the Doh chord or of the ascending and descending scale should be avoided. Such over-use leads to fixations in the children's minds and creates difficulties for the teacher in the introduction of other intervals. Children have no trouble in singing Doh, Me, Soh, Doh, but the over-use of this chord makes the introduction of a progression such as Doh, Me, Fah, very difficult. Similarly, children find it easy to sing the scale, either ascending or descending, but, if given practice in this only, will have real difficulty in singing a progression such as Doh, Ray, Me, Ray, Doh.

Sight reading must never be a drill merely for the sake of drill. For this reason an interval which is not sung accurately should be demonstrated by the teacher, copied by the children and then practised by being presented in different musical contexts. Monotonous repetition has no value.

The following suggestions are made as further aids to teaching:

(*a*) The modulator can be used for the pointing of 'silent' tunes: the teacher points a short phrase two or three times, the children watching in silence. They may then be expected to sing it from memory.

(*b*) The class may be divided into four smaller units each of which is expected to sing successive lines of an exercise without being warned in what order they will sing. This is good training, since, although the majority of the class are not singing simultaneously, they must listen if they are to sing their note correctly when required.

(*c*) The writing by the children of the Tonic Sol-Fah names of a short passage sung by the teacher to a vocal sound is an invaluable aid to the development of intelligent listening.

All these methods are useful in inducing more individual effort on the part of the children; it is not uncommon to find in a class a few good children who lead whilst the rest passively follow.

It is impossible to lay down any hard and fast rules for the rate of progress, so much depends upon the teacher and the class, but she is a wise teacher who, in this branch of the work, hastens slowly.

Phase II

In the early stages it is convenient to regard the crotchet as the unit of movement and the next step is to combine rhythm with pitch by the introduction of taa-aa, taa, taatai, and tafatefe and their associated rests in Staff Notation. In the teaching of notation the order should be as follows:

(*a*) the time value to be taught should first be aurally recognised by the children;
(*b*) the name should be given;
(*c*) the written form should then be shown;
(*d*) the children should be given practice in reading this.

This means that – to take an example – in teaching the crotchet, the children are first allowed to hear what a group of crotchets sounds like before learning that the crotchet has the time name taa; they then see how it is written, viz., ♩ and are given practice in reading with the Tonic Sol-Fah names beneath. This should be an invariable rule. Different types of notes should be introduced early so that rhythmic variety can give added interest to the work.

The teaching of time values is relatively simple; the more difficult problem is that of teaching time with pitch. For this reason time exercises should be linked with pitch as soon as possible. When fluency has been reached in reading an exercise such as the following:

then the introduction of Staff Notation may follow.

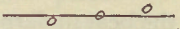
Phase III

There are two approaches to Staff Notation which should not be employed:

(*a*) the adult conception of it;
(*b*) the pianistic conception of it.

The first assumes that the child can cope with lines and spaces, bar lines, clefs and key signatures all at once. This is a bewildering imposition from which children seldom recover. The plea, therefore, is for a simplified approach suitable for young children.

The second assumes that the child must know the names of the notes E.G.B.D.F. and F.A.C.E., and must start with Key C. This makes the problem even more bewildering because the child has to start with six lines instead of five. This knowledge of the names of the piano notes is not necessary and may be left to a much later stage.

It is suggested that a similar start should be made to that employed in teaching Tonic Sol-Fah, i.e., by letting the children discover for themselves that with one line and its accompanying spaces they can play with the three notes, Doh, Ray, and Me, viz., 

and can sing and write such tunes as 

The children should then be allowed to discover for themselves that by the addition of another line the extra notes Fah and Soh can be added to the picture. As soon as they are familiar with three lines they should be introduced to the idea of a movable Doh. Successful reading in Staff Notation depends upon the ready recognition of the notes in relation to Doh in any position on the lines and in the spaces and this conception should be introduced as soon as possible. At the three-line stage it should be pointed out that if Doh is on a line, then Me and Soh are both on lines; and, similarly, if Doh is in a space, then Me and Soh are both in spaces. The recognition of the relative positions of these notes constitutes the foundation of fluent reading. Little by little this work can be expanded until the Treble Stave has been dealt with.

Whilst this work is going on, reading from the Tonic Sol-Fah vertical scale should be continued and correlated with similar exercises pointed on the lines and spaces.

In Tonic Sol-Fah no advantage is to be gained by pointing tunes which the children know, but this is not the case in Staff, since the children themselves have to supply the names of the notes. (There is value in pointing *silently* in Tonic Sol-Fah a similar tune and asking the children to identify it.)

Care should be taken so to grade the work that the difficulties are surmounted one by one. When the basic time values have been mastered, other more complex rhythmic figures may be introduced, and as far as possible there should be close correlation between the blackboard and the song book. For this purpose all children learning Staff Notation should be supplied with a Song Book; they must see that what they are learning from the blackboard is giving them

facility in song reading. The one is only useful in so far as it is skilfully applied to the other.

Phase IV

The children can now be introduced to clef, bar line, time signature and key signature. Bar lines may be taught through their position in relation to the strong accent; the children should then discover for themselves how many beats there are in each bar. In the early stage it is suggested that the time signature should be written with the number of beats at the top and the actual note of the beat underneath, viz., $\begin{smallmatrix}3\\ \text{♩}\end{smallmatrix}$ rather than $\frac{3}{4}$. The simple times should be dealt with first, followed by the compound times.

There is little difficulty in reading key signatures. The problem is simply to find Doh and the rules for this are that the last sharp to the right is Te and the last flat is Fah. From this the positions of high and low Doh can easily be ascertained. With the introduction of Fe and Ta the rules for finding the new position of Doh in the event of a simple modulation can be taught.

In all this work the children must be taught to look, think, hear mentally and then sing. With regular practice these four processes will become simultaneous and the children may be brought to the stage where they can dispense with the Tonic Sol-Fah names.

AURAL TRAINING

The importance of aural training cannot be overstressed. In the past it has been regarded mostly as ear training in pitch and time. But it is far more than this. The ultimate object of aural training is to develop in the child intelligent musical perception. It follows, therefore, that aural training is an integral part of the teaching of music in all its phases, that it is an essential thread in every musical activity and must not be regarded as an isolated unit in musical experience.

The evidence of the ear can be as convincing as the evidence of the eye and a start should be made by making children aware of the fun they can have by using their ears acutely and intelligently. This involves recognition of the sounds of motor cars, lorries, footsteps, bird calls, the wind in the trees, laughter in the playground and a host of other familiar sounds. When this interest has been aroused it should then be directed into musical channels.

Training in pitch begins in song singing, but it is also achieved in pitch games at the piano, in listening, and in imitative exercises aimed at securing quick response. At the piano, pitch training should begin in the recognition of wide differences of pitch, e.g., the

extreme ends of the keyboard. These differences should then be gradually narrowed until the children can recognise the difference between two or three notes lying fairly close together. In all this work, great use can be made of diagrams on the blackboard to show the rise and fall of a tune and the general shape of its melodic outline.

Similarly, training in rhythm begins in song singing but is also achieved in singing games, in movement and in rhythm-clapping exercises. Such exercises should be short and should not be overused since rhythm becomes music only when associated with pitch.

In the early stages of song singing the teacher can point out whatever is interesting in rhythm, pitch, the shape and form of the tune and its mood. This in no way conflicts with the spontaneous happiness of the work and stimulates the children to a real appreciation of what they are doing.

As in Art, so in Music, children should be expected to show originality and not merely to copy. They should be encouraged to make up their own little tunes, which, in the early stages, the teacher should write on the blackboard as the individual children sing them. In the later stages the children should be encouraged to write their own tunes. At first, the children can be asked to suggest words which will fit a given rhythmic pattern. The process can then be carried a stage further and they should try to superimpose a tune upon a given word-rhythm. It is important that children should learn to listen as well as to sing. A few minutes each week might be devoted to listening, but it must be stressed that the pieces chosen should be suitable and of short duration. One hearing is not enough. The music must be played several times, at intervals, until the children come to know it and can recognise it. The teacher should be ready to invite to the school competent musicians who are willing to talk about their instruments and play to the children.

In the later stages of training in listening, programme music should come before purely abstract music. Abstract music might well begin with the dance movements of the eighteenth century, but the scheme of work must be left to the discretion of the teacher, who, feeling the pulse of her class and seeing the formation of its tastes, will know better than anyone else what path to take.

SCHOOL BROADCASTS

Many teachers, particularly those who can claim no special qualifications in music, find much assistance in the B.B.C. school broadcasts, which, besides being planned and conducted by experienced and accomplished teachers of music, have at their command re-

sources not normally within the reach of the class teacher. The various series cover almost the whole range of music teaching in the primary school and can be made the basis of well-balanced school and class syllabuses.

It must be borne in mind, however, that the broadcasts alone are not sufficient. They call for the full co-operation of the teacher and must be reinforced by active teaching. It is the teacher's responsibility to select the series best suited to the needs of her class, to prepare the ground for each broadcast, to ensure that the quality of reception is as good as can be obtained, to set the class an example of attentive listening, to assist the broadcaster during the broadcast in any way possible and, most essential of all, to follow up the broadcasts with further teaching and practice. In fine, the value and success of the broadcasts depend largely on the part played by the teacher who uses them. For most of the series it is necessary that the children should have copies of the appropriate pupils' pamphlets.

PERCUSSION BAND

The percussion band is not suitable for Primary 1 and Primary 2, since, if it is to achieve its objects, it calls for a discipline and a control to which these young children should not be subjected. It might be introduced in Primary 3. It can provide excellent training in real musical appreciation, and should be used to teach children to listen and to explore pitch, pulse, pattern, phrase and orchestral texture. By orchestral texture is meant the variety which can be obtained by instruments playing singly and in the many different combinations which are possible. The first stages can be taught only by the teacher who can play the piano, but in the later stages a record player may be used.

It cannot be too strongly emphasised that only good quality instruments should be employed; inferior instruments produce a sound which cannot be described as musical. Only the recognised instruments of the percussion section of the orchestra should be used, viz., drums, triangles, cymbals, castanets and tambourines, together with a solo triangle and a solo cymbal for special effects.

Care should be taken that the children handle and play the instruments in the correct manner. When they can do this, a start may be made in the playing of simple nursery rhymes. The various patterns to be played by the instruments should be dictated by the teacher from the piano. This can be achieved by associating the instruments with the words and lines of the rhyme. All the instruments should not be playing all the time. An infinite variety is possible and the teacher must insist that the children listen to what

she is doing at the piano. This is very important. It follows, therefore, that the children should play at a level of tone which does not prevent them from hearing the music which they are exploring and colouring by the percussion band.

It is suggested that pulse is the easiest feature to explore first. As children grow in competence pattern can be superimposed upon pulse or alternated with it. The significance of rests should not be overlooked and the children should be introduced to the playing of simple rhythmic passages from the blackboard. This work should be carefully graded so as to lead to the reading of blackboard charts and ultimately to the reading of individual scores in suitable musical arrangements.

THE RECORDER

Many schools are showing an awakening interest in instrumental music. This is an encouraging development, since it enables the child to make music in a variety of ways that were not previously possible. Any widening of musical activity is bound to result in a richer musical experience and for this reason the recorder is to be welcomed.

There are several types of recorder but the one most commonly used in primary schools is the Descant recorder in C. This is because it is the easiest to handle and the cheapest to buy.

This is not the place in which to describe the recorder or to explain the technique of its playing. It is sufficient to say that many excellent books have been written on the subject and that it is a simple instrument for the teacher to learn to play and then to teach to the children. It is a real musical instrument which can stimulate the children's interest in sight reading and will blend pleasantly with class singing.

MUSIC IN THE SMALL SCHOOL

Music in school is essentially a communal activity in which the pleasure of the individual is enhanced because it is shared with others. The teacher in the small school is faced with the problem of teaching a group of children widely differing in age and mental attainment, and of teaching them simultaneously. Because of this, some of the suggestions made in the programme may be difficult or indeed impossible to carry out in the small school.

The greatest difficulties lie in the teaching of sight reading and in aural training and it is inevitable that teachers should prepare modified schemes of work. In such schemes the teaching medium should be mainly Tonic Sol-Fah, but an attempt should be made to

introduce the simpler elements of Staff Notation. The emphasis should be upon the making of music – through song singing, recorder playing and the percussion band – and upon training in listening. In song singing discretion must be exercised in the choice of material since the songs must be within the capacity of the whole group. Every effort should be made to render this work as pleasurable as possible.

A scheme of training in listening presents few problems since it is not difficult to choose musical examples of wide appeal. Mechanical aids are particularly helpful in the small school.

Chapter X

HISTORY

THE object of what follows is to bring together a body of information which may enable teachers to plan courses of study and develop class techniques appropriate to the children they teach. It is not considered either possible or desirable to provide a ready-made syllabus suitable for all types of school or to prescribe teaching methods of universal application. On the contrary, it is to be expected that the type of work attempted will differ from school to school in accordance with the varying interests and background of the pupils and the conditions under which they have to be taught. Town children will not have the same interests as country children; the topics and treatment that stimulate the abler children may not suit those less gifted; the content of lessons for classes composed of boys only will differ from that for girls' classes. The type and quality of the work done will be influenced by such considerations as whether classes are grouped or taught separately, whether each class has a separate room or not, and the amount of reading matter and art and craft material available in the school.

It is therefore the duty of the Principal and staff of each school to draw up in co-operation a master plan outlining the curriculum for the entire school and to settle the general lines on which the subject is to be taught, taking all the local circumstances into account in doing so. The individual teacher must then break down the yearly assignment into smaller and more manageable units and decide in detail how the material may best be presented to the pupils.

General principles underlying all history teaching

However much the content and method of the teaching may vary, it will be sound and fruitful only if it is securely based on two general principles. One has already been mentioned – that what is taught must be in line with the character and predominant interests of the children. The second, equally important, is that the topics we select and the treatment we give them must contribute in some way or other to the development of those skills and attitudes of mind that the study of history should engender in those who pursue it. How teaching is affected by the mental and physical characteristics of the pupils is dealt with later in discussing syllabus and methods; an attempt to summarise the aims of history teaching is made now.

Though complete agreement on these aims is unlikely, the different views have much in common. We must expect from our history teaching, as from all the activities of the curriculum, that it should contribute to the development of various mental and physical powers and capacities in the pupils – that it should provide an outlet for their emotions, widen their experience and their command of language and, by the class-room activities which should form part of the instruction, promote self-confidence and increased mastery of tools and materials. Further, we must hope that from the topics we choose the pupils should learn to pay increasing respect to those qualities and virtues which society deems worthy of admiration.

But we must also expect that if history is to justify its place in the curriculum its study should confer some specific benefit on the pupils which is necessary for the completion of their education and not otherwise obtainable. This consists of, first, some factual knowledge of man's past relations with his fellow men and his physical environment which will help the pupils better to understand the world around them; e.g., why there are so many Canadians of French extraction, and why such a large proportion of the people of Northern Ireland have Scottish names. Second, and more important, it consists of an attitude of mind which ensures that our pupils, whilst not regarding the historical process as a simple chain of cause and effect, or the past merely as an inferior preliminary to the present, are yet aware that the present is only the latest instalment of an unfolding story, and that our actions may cast long shadows into the future.

One further point may be made. The aims outlined above are those that guide the teacher, not the pupils. For them the topic is judged merely by the interest it arouses; it is for the teacher by skilful, sensitive handling to ensure that its wider significance also becomes clear. And so we meet again the first of our general principles, for interest will not come unless the subject matter can be brought within the compass of the children's understanding. Anything beyond their comprehension should be discarded, no matter what its importance may be in the adult scheme of things.

PRIMARY 4

For these children, stories are required with a strong human interest, vivid in action and concerned with simple issues and primary emotions. Stories dealing with the satisfaction of fundamental needs in circumstances differing from those of the present day are popular, especially if they are centred on imaginary families; and the adven-

tures of children have enormous appeal. At this stage many children cannot clearly distinguish between myth and reality, and so this is pre-eminently the time for the great legends that form part of our cultural inheritance, e.g., the adventures of Odysseus, Cuchulainn, King Arthur and his knights, and Robin Hood. The stories should not be drawn exclusively from any particular time or country, nor must they necessarily be arranged in chronological order. Teachers often feel that their most promising material comes from the earlier stages of the world's history. That may be so, but it should be remembered that there is much in modern history that is worthy of inclusion in the syllabus – the careers of Father Damien, David Livingstone and Florence Nightingale, to quote a few examples only.

Some information may be welcomed regarding the number of topics teachers may be expected to deal with during the year. The opinions expressed in the section dealing with classroom techniques clearly envisage that teachers will be free to spend much longer at each topic than has been warranted by traditional practice. It may be assumed that, allowing for a certain amount of work being done on historical themes in the English and Art and Craft periods, an average of three half-hour periods per topic will be ample. This should allow from 12 to 15 topics to be studied yearly.

PRIMARY 5 to 7

In planning schemes of work for these children we must take into account their widened experience and more developed intelligence, and their increased capacity for reasoning and sustained attention. Legends and quasi-historical episodes like that of King Canute and the waves have no longer a place in the syllabus except in their proper colours; stories based on fact are required and, in the broader interests of the teaching, stories of historical significance. Where it is possible to do so without trespassing beyond the bounds of the pupils' interests and comprehension, the wider significance of the events introduced into the lessons should be mentioned. For example, the story of the first voyage of Columbus might be followed, with pupils aged ten or eleven, by discussion of the type and size of the ships used, the time taken and the dangers encountered on the voyage as compared with the conditions under which the Atlantic is now crossed; and by some reference to the importance of the American continent in the world to-day.

Teachers should not, however, suppose that their pupils can grasp much that comes usually under the heading of political,

diplomatic and constitutional history; they are still at the stage where the personal and the episodic have the greatest appeal, and this type of topic must form the staple of the syllabus.

In what follows it is suggested that the syllabus for these years be confined principally to the classical civilisations and Great Britain and Ireland, with frequent excursions outside those bounds where the importance of the topic warrants.

A further point of great importance must be made. One of the obvious ways of helping our pupils to develop a sense of historical perspective, by which they may appreciate the extent to which the present has been affected by what has gone before, is to make certain that our history syllabus extends as near as possible to the present day. Even in the primary school, therefore, we must deal with such aspects of the modern world as our pupils are capable of understanding. To stop our history teaching at 1500 A.D. or any other date, in the hope that another educational institution will carry on from there, is to deprive our work of much of its point and usefulness.

Suggested syllabus for Primary 5 to 7

As the classes may be taught separately or grouped in a variety of ways, no single scheme can be laid down for all schools, but the following suggestions may be found useful. They are based on the assumption that all pupils will have one hour per week to devote to the subject.

Primary 5:

(*a*) When not grouped with any other class.

Topics drawn from the earliest times to about 1000 A.D.

(*b*) When grouped with Primary 4.

A syllabus composed of (*a*) and the work suggested above for Primary 4, taken in alternate years.

Primary 6 and 7:

Topics drawn chiefly, but not exclusively, from the history of Great Britain and Ireland from about 1000 A.D. onwards.

If the two classes are taught separately the topics for Primary 6 might be drawn from the period 1000 to 1660, and for Primary 7 from 1660 onwards.

Where the classes are grouped a composite programme must be drafted. The simplest plan would be, of course, to take the sections outlined in the preceding paragraph alternately; but this is open to the serious objection that, every other year, at a time when the teacher is trying to lead her pupils to the conception of history as an unfolding story, the natural arrangement of the material is upset by her having to deal with the period after 1660 before her pupils

have been made acquainted with the medieval background to their studies. An alternative scheme would be to draft two yearly syllabuses each covering the whole chronological range since 1000 A.D. and running on parallel lines.

An arrangement on similar lines should be adopted where it is found necessary to group Primary 5 and 6.

For more detailed information regarding the possible contents of the scheme they select, teachers are referred to the list of topics given at the end of the chapter.

Suggested syllabus for Primary 5 to 7 in unreorganised schools

When Primary 5 to 7 form three units in an unreorganised school, the work designed for them must be considered in the light of what is planned for the senior pupils. This will be discussed in more detail later. At the moment what concerns us is whether the work designed for the older pupils is on traditional periodic lines or whether one of the alternative schemes to be discussed later has been adopted. If the former, then it is suggested that the work of Primary 5 and 6 should be so adjusted as to end about 1500 A.D., leaving the last 450 years to be apportioned amongst the senior classes as is found most appropriate.

If the traditional arrangement of the syllabus is not being followed, it is suggested that the courses outlined above for Primary 5 to 7 be adhered to and the study of 'streams of development' or 'patches' confined to the remaining years of the children's school life.

CLASSROOM PROCEDURE: TEACHER'S PART IN THE LEARNING PROCESS

Learning history is a co-operative activity in which both teacher and pupils have essential parts to play. The role of the teacher need not be emphasised; but it must be made clear that, until there has been obtained from the pupils an active and willing effort to master the material placed before them, nothing of real educational value has been achieved. In what follows, the parts played by the teacher and her pupils are, for ease of arrangement, discussed separately, but the artificiality of any such division should be obvious. Learning proceeds by the efforts of all concerned. The work of the teacher should stimulate the pupils to an active response which should in turn provide opportunities for fresh clarification, exposition and encouragement by the teacher, resulting in still more effort by the pupils, and so on in a continuing process.

The teacher's part in the process of learning may be considered under several heads.

Planning the work

Only the teacher sees the ultimate aim she wishes to attain and the part her subject plays in the general scheme of the children's development. Hers, therefore, is the responsibility for designing the syllabus, and selecting the content of the lessons and the method of presenting them to the pupils so as best to achieve her purpose.

Arousing interest and curiosity

Undoubtedly the teacher's chief means of securing attention from her pupils is by her skill in presenting the story. Whether the story is told or read matters little so long as it fulfils its purpose. Written stories, where suitable, should not be ignored, but they are not always easy to obtain. The telling of the story has many positive advantages. It is a more flexible method than reading and allows the teacher greater freedom to vary the speed of narration and the weight of the material to suit the children's needs, to emphasise, restate and clarify where necessary and, by no means of least importance, to keep a watchful eye on the inattentive.

The ability to tell stories in a vivid and arresting fashion is, therefore, a most useful accomplishment, and most teachers have to acquire it by thought and practice. But the story-teller's skill will be of little avail unless she has a tale to tell worthy of her efforts. The story must be thoroughly known and the mind stored with the vivid detail that brings the characters and episodes to life and stimulates the pupils' imagination and emotions.

A supplementary method of arousing the interest of children old enough to read with reasonable ease is to present material in the form of a problem for the pupils to solve by discussion or simple research. History teaching affords many opportunities for such an approach; and the teacher might perhaps consider the use that could be made of, say, the population figures for Ireland since 1800; those of Belfast over the same period; the number and geographical situation of the constituent states of the U.S.A. in 1780, 1820, 1850, 1900, 1920; pictures of (*a*) an eleventh century mote and bailey, (*b*) a castle of the late thirteenth or early fourteenth century, e.g., Harlech or Caernarvon, and (*c*) an Elizabethan mansion.

Promoting comprehension

Obviously the story must be told in a way that will enable the pupils to comprehend, at least in some measure, what they hear; but, generally speaking, much more than this is needed before the information placed before them becomes a real part of their experience and is understood in its various ramifications and consequences.

Techniques designed to help the process of assimilation are outlined below.

First are the traditional practices of questioning the pupils on what they have heard and allowing them to recapitulate the salient points of the lesson. Valuable though these practices may be in indicating to the teacher the extent to which her work has been effective they do not go far enough. In addition, opportunity must be provided for the pupils' questions as well as the teacher's, for discussion amongst the members of the class and, if possible, for contributions to the general pool of information and ideas from the pupils' own knowledge and experience. If she obtains a response of this kind from her pupils the teacher need be in no doubt as to the success of her work. Further, in a way no mere revision can do, such spontaneous comment can point the way to fresh activity for the class as a whole, for sections of it, or indeed for individual pupils.

Another device for promoting comprehension is the proper use of the blackboard. Most teachers use it much too sparingly. Whether it is used during the teacher's oral exposition depends on the type of material being dealt with. An exciting narrative would lose much of its effect if the thread of the story were broken by excursions to the blackboard. On the other hand, it is difficult to imagine how lessons on, say, the medieval castle or the open-field system of agriculture could be given without frequent use of the blackboard for sketches and diagrams. Whether or not it is used during the initial stage of the lesson, it certainly becomes indispensable later, first when it becomes necessary to list the names of places and personalities occurring in the story and to fix their appearance and spelling, as well as their sound, firmly in the pupils' minds and, later still, when the salient points of the topic are being summarised either for pupils to transfer to their note-books or to form the basis of a written exercise.

No better aid to the promotion of comprehension could be found than the use by the pupils of a suitable text-book to supplement the teacher's oral narration. Collections of simply worded biographies are now on the market and it is recommended that some such book be used at as early a stage as possible in Primary 4.

What qualities should we look for in a school history text-book? It should cover as much of the syllabus as possible (it will scarcely cover all); it should be bound strongly, printed attractively on good paper, written with sound scholarship in language simple enough to be read by the children without a great deal of outside help, plentifully illustrated and, if it is to be used by the older children, supplied with maps and diagrams, a table of contents and an index.

The text-book may be used in various ways. Most commonly it serves as a means by which pupils can revise and supplement previous oral teaching; but with the older children it may be used at the beginning to give a broad general picture of the topic to be studied, a picture which can later be filled in by exposition and discussion. It can also serve as a source of information in which the pupils may find answers to problems arising from the lesson. It ought not to be used for reading aloud by the pupils in turn.

To supplement the resources of the text-book a history library should be built up. The books must be such as the children can use without much help and so should be very simple. Easy books of reference, elementary biographies and historical stories in an accurate setting are all valuable, as are also books containing pictorial material. A good atlas should be included. In addition, the teacher can reinforce the text-book by occasionally reading short extracts from books too difficult for the pupils to tackle unaided.

A great help to comprehension is afforded by 'visual aids'. The blackboard and the text-book, two of the most important, have been mentioned; others of more limited usefulness may be dealt with briefly now. In a few favoured localities it may be possible to pay visits to historic sites and buildings. At times a lesson can be made real and interesting by introducing such things as contemporary coins, weapons, implements and documents. The resources of the local museum should not be overlooked in this connexion. Where actual objects cannot be seen, the production of a model may sometimes prove useful, e.g., in dealing with the history of architecture or of costume.

The above are for occasional use only. For most of her illustrative material the teacher has to rely on pictures, diagrams and maps. The most convenient, but the most neglected, source of these is the class text-book. For further material, it is now possible to purchase sets of historical pictures of excellent quality.

Pictures are introduced into the history lesson not merely to be looked at in a general way but to be closely studied. Their selection and use, therefore, require considerable thought. It is not perhaps generally realised how limited is the power possessed by young children to see the underlying unity of a whole composed of many elements. Even at the age of ten many children still tend to look on a picture as a collection of details without perceiving the connexion between them. Pictures, therefore, must be as simple and uncomplicated as possible, with a central theme standing out clearly and not enveloped in a mass of confusing detail.

The teacher's task in using pictures is threefold. Firstly, she must see that the constituent parts of the picture are correctly interpreted; secondly, she must try to establish such connexions of time, size and position as she feels she can; and, thirdly, she must try to set the information contained in the picture in its historical context. Thus, for example, the study of a picture of Stephenson's 'Rocket' should deal not only with its appearance and mode of construction and the time and place of its production, but should lead to a discussion of what it succeeded and what it gave way to in the development of transport, and of the forces that made new forms of transport necessary with their social and economic consequences.

Further methods of engaging the pupils' interest in their work are the use of films and film-strips, and the school broadcasts of the B.B.C. This is not the place to give detailed advice on the handling of these devices; but teachers should realise that their effective use involves careful planning and special classroom techniques. The film or strip must be available when needed, it must be closely studied and not merely looked at, and the information derived from it must be woven into the texture of the pupils' knowledge. The B.B.C. programmes include broadcasts suitable for young children and the teacher should make every effort to use them where they meet her needs. When they are used they must, however, be carefully prepared for, and thoroughly revised, and the information they yield should be incorporated into the general work of the class.

Encouragement of pupil activity

It is also the teacher's function to provide situations in which the children's interest and curiosity may find an active outlet, and to see that the activity so stimulated serves her long-term aims. The various ways in which the pupils can take an active part in the work are summarised in the next section: some have already been mentioned.

CLASSROOM PROCEDURE: PUPILS' PART IN THE LEARNING PROCESS

The proper telling of the story should result in what has been termed 'active listening', in which the pupils by the pace of the narrative are transported in imagination out of the classroom to the scene of the action and actively identify themselves with the participants. This in its turn should promote questions by the children, discussion and, possibly, further oral explanations by teacher or pupils. It should also result in directed reading, usually of the class text-book. The united efforts of the pupils may produce on the

blackboard a summary of the topic, to be kept as a record or used as the foundation for more formal written work. In Primary 6 and 7 the pupils may undertake simple research on topics arising out of the lessons, either individually or in groups, and make the results known to the rest of the class orally or in writing. The children may wish to dramatise some of the episodes they have heard; this should as a rule be done quite informally, the actors extemporising the dialogue as the play proceeds and incorporating suggestions made by the audience. Where the skill of the teacher and the resources of the school are adequate the children's interest may result in the making of simple models: more often perhaps painting, mapping and the construction of diagrams and time charts will be undertaken, and the modern practice of combining Art and written English for the junior classes has significance here. Elaborate 'projects' involving the recasting of the entire class time-table will not be undertaken in most schools, but the production of a co-operative class record of work done is an appropriate and less demanding activity. It should contain written summaries, annotated maps, diagrams, pictures and time charts done by the pupils; and to it each should contribute according to his ability.

Few teachers will have the time or inclination to attempt all the activities set forth above, and this is not expected. The following elements should, however, form part of the study of all topics where possible, however much they may vary in content and sequence with the age of the children and the circumstances of the school: (*a*) oral exposition by the teacher; (*b*) discussion by the class; (*c*) directed reading by the pupils; (*d*) some form of written work or drawing by the pupils.

CHRONOLOGY IN PRIMARY SCHOOL HISTORY

During the first two years of the course the children are in the 'once upon a time' stage. As dates are meaningless to them and centuries and even years merely names, the lessons should not be burdened with any such details. Indeed no harm is done if the topics are taken out of chronological order. In Primary 5 the arrangement of the topics should be chronological, though this need not be stressed. In the last two years of the course more emphasis may be laid on the chronological aspect of history. The idea of events happening before or after one another may be established as a beginning; simple exercises may be devised to give the pupils clearer concepts of a year and a century; time charts may be constructed and interpreted. With time charts come dates but only the very few needed to act as sign posts. Chronological considerations play only a subord-

inate part in the teaching of history at the primary school stage and many pupils at the end of the course may have only very rudimentary ideas on the subject.

LOCAL HISTORY

Much of the subject matter of local history is too difficult for children and its systematic study has no place in the primary school. Topics should not be included in the syllabus merely because of their local connexion; but when a theme, intrinsically suitable for study, can be connected with the district where the children live the added reality and interest it thereby gains are to be welcomed. The teacher should, therefore, include in her syllabus, when possible, topics dealing with suitable events of historical significance that have occurred in the district and the careers of famous local figures. Similarly, when local examples can be found which illuminate topics of general interest, they should certainly be used. For example, much use can be made of local remains to illustrate life in prehistoric times, or of local buildings and museum exhibits in the history of architecture, costume, transport and similar topics. It is pertinent to mention here the interest that place-names have for many pupils and the great amount of valuable material that may be derived from their study.

CONNEXION WITH OTHER SUBJECTS OF THE CURRICULUM

The teaching of history is closely connected with that of other subjects of the curriculum. As progress in the subject depends mainly on the children's ability to understand and use language, its relation to English is intimate and important. During the history lesson the teacher has ample opportunity to train her pupils to read for meaning and to express their ideas intelligibly in writing and should consider such training part of her duty. On the other hand some of the work done in the time-table English period might be related to the pupils' historical studies.

The connexion of history with geography is equally close. As soon as the children have learned the use and functions of maps, each important place mentioned should be carefully located and the map kept constantly available for reference. Also, many historical episodes such as, for example, the siting of the Roman military centres in Britain, or the Edwardian castles in Wales, the Scandinavian expansion in the eighth and following centuries, or the nature of European penetration of the North American continent, are intelligible only in the light of geographical considerations, and any teacher of history who ignores such factors thereby renders her task more difficult.

It has already been suggested that part of the teaching of history should consist of drawing, mapping and, where appropriate, simple modelling by the pupils. These activities should, for the most part, be carried on during the time devoted to History teaching, but should they occasionally spread to the Art and Craft periods no great harm will result.

LIST OF TOPICS SUITABLE FOR INCLUSION IN THE HISTORY SYLLABUS

It should be pointed out that this is not a History syllabus suitable for any particular class, but a list of topics from which teachers may select what suits them best. This should be clear from the number of topics listed and their varying difficulty. Topics marked * contain more difficult material; they are intended mainly for the older pupils in unreorganised schools. The list is not exhaustive and teachers are free to include in their syllabuses topics not mentioned in it.

1. Life in prehistoric times, with special reference to local archaeological remains, and the great discoveries of early man – the making of fire, the use of metals and the domestication of animals.
2. Egypt: Introduction of agriculture and its consequences, e.g., growth of towns and hence of commerce and architecture, the invention of writing, developments in religion and in the measurement of time.
3. Mesopotamian Empires: Life in Babylonia and Assyria; some famous rulers, Hammurabi the Lawgiver, and Sennacherib the Warrior.
4. The Hebrews: Stories from the Old Testament, e.g., Abraham, Moses, David, the exile in Babylon, Daniel.
5. Crete: Minoan civilisation.
6. Greece: Stories from Homer; Greece and Persia, Darius and Xerxes, Pheidippides and Marathon, Leonidas and Thermopylae; life in Athens and Sparta, Socrates; Olympic games; Alexander the Great.
7. Greek and Phoenician traders and colonists. How much the Greeks and Phoenicians knew of the world.
8. Rome: Foundation of the city, traditional story of Romulus and Remus; how Rome became a republic, Horatius; Rome and Carthage, Hannibal; how Rome became an empire, Augustus; Rome conquers Britain, Julius Caesar, Agricola, Caractacus, Boadicea; life in Roman Britain, roads, towns, villa life, trade, dress, etc.; the break up of the Roman Empire with special reference to the barbarian invasions of Britain.

9. Early history of Christianity: Stories from the Gospels, St. Paul's journeys; persecution of the Church, Constantine the Great; St. Patrick, St. Colmcille, St. Aidan, St. Augustine; work in Europe of missionaries from England and Ireland, St. Boniface, St. Columbanus; the island of saints and scholars.
10. The Northmen: In England, Alfred, Guthrum, Canute; in Ireland, Brian Boru; in Europe, the settlements in Normandy as a preliminary to No. 11.
11. The Normans: Conquest of England, Edward the Confessor, Harold, William the Conqueror; the Domesday Survey; Henry II and Archbishop Becket; invasion of Ireland, Dermot McMurrough, Richard de Clare.
12. The Crusades: Mahomet; Peter the Hermit, Richard I, Saladin.
13. King John and Magna Carta.
14. Simon de Montfort.
15. England and her neighbours in medieval times: Edward I and Wales; England and Scotland, Robert Bruce, Bannockburn; the Hundred Years' War with France, the Black Prince, Henry V, Joan of Arc; the Anglo-Normans in Ireland and their relations with the Irish, the Pale, the great Earl of Kildare, Silken Thomas.
16. Monks and friars in medieval times; St. Benedict and St. Francis.
17. Life in medieval times: In castle, manor, town and on the roads; the Black Death; life in medieval Ireland, in the Pale, in the castles of Irish chiefs and Anglo-Norman nobles.
18. From manuscript to printing; Caxton.
19. Geographical discoveries and Tudor sailors: Columbus, Vasco da Gama, Cabot, Hawkins, Drake; the Spanish Armada.
20. Religious changes: Centred round biographies of suitable people, e.g., Sir Thomas More, Archbishop Cranmer.
21. Elizabethan Ireland: Desmond rebellion, plantation of Munster; Shane O'Neill, Hugh O'Neill, plantation of Ulster under James I.
22. Trade and commerce in Tudor times.
23. How people lived in the reign of Queen Elizabeth I.
24. How England and Scotland came to have one king.
25. The Puritans: The Hampton Court Conference; the authorised version of the Bible; the Pilgrim Fathers.
26. Struggle between King and Parliament: Charles I, Buckingham, John Hampden, Oliver Cromwell.
27. Britain without a king: the rule of the Puritans.

28. The Restoration: The Great Plague, the Great Fire, Sir Christopher Wren.
29. How James II lost his throne: Events leading up to the flight of James to France; the war in Ireland, the siege of Derry, the battle of the Boyne, the sieges of Limerick, Patrick Sarsfield, the 'Wild Geese'; events in Scotland, battle of Killiecrankie, massacre of Glencoe.
30.* The Duke of Marlborough and the wars with France.
31. Hanoverians and Jacobites: Accession of George I, Jacobite rebellions; Sir Robert Walpole.
32. Growth of the Empire: In Canada (Wolfe); in India (Clive and Warren Hastings); In Australasia (Captain James Cook); the loss of the American colonies (George Washington); Wm. Pitt, Earl of Chatham.
33. John Wesley.
34. Britain and Napoleon: The French Revolution, rise of Napoleon; Wm. Pitt, the younger, Nelson, Wellington.
35.* How Great Britain and Ireland came to have one parliament.
36.* Growth of religious equality: Laws against religious dissenters in England and Ireland and their repeal; Daniel O'Connell.
37. Changes in agriculture: New crops and methods, enclosures, Jethro Tull, Coke of Holkham, Robert Bakewell; the Irish potato famine and its consequences, the repeal of the Corn Laws, Sir Robert Peel, how Irish farmers came to own their farms; farming during the two world wars.
38. Changes in industry: The introduction of power-driven machinery into the textile industries, Watt, Arkwright, Crompton; the Ulster linen industry; growth of factories and towns, conditions obtaining therein; people responsible for improvements in working and living conditions, Lord Shaftesbury, Robert Owen, Sir Robert Peel.
39. Changes in methods of transport and communication: Canals (Brindley); roads (Telford, Macadam); railways (Stephenson); steamships (Robert Fulton, Henry Bell); motor-cars (Samuel Dunlop, Henry Ford, Lord Nuffield); aeroplanes (Wright brothers, Alcock and Brown, Sir Frank Whittle); the telegraph and telephone, the cinema, radio and television.
40. Social reformers: John Howard, Elizabeth Fry, William Wilberforce.
41. Progress in medicine: Edward Jenner, Sir James Simpson, Louis Pasteur, Lord Lister, Sir Alexander Fleming, Florence Nightingale.

42. Imperial history: India, the Mutiny, Mahatma Gandhi; South Africa, the Great Trek, Cecil Rhodes, the Boer War, General Smuts, the formation of the Union of South Africa; Australasia, Sir George Grey, formation of the Australian Commonwealth; Canada, the Durham Report, federation; the Empire-Commonwealth in the modern world.
43. Travellers and explorers: Mungo Park, David Livingstone, Captain Scott, Sir Edward Shackleton, Roald Amundsen, Robert E. Peary, Fridtjof Nansen, the Kon-tiki expedition; the climbing of Everest.
44.* Famous statesmen: Chatham, Pitt, Peel, Disraeli, Gladstone, Lloyd George, Sir Winston Churchill.
45.* The growth of democracy in central and local government: The Parliamentary reform Acts, the Suffragettes.
46. How Northern Ireland came to have its own parliament.
47.* The wars of 1914-18 and 1939-45, emphasising vivid incidents and outstanding personalities; the development of the U.S.A. and the U.S.S.R.
48.* The League of Nations and the United Nations Organisation.
49.* How the State took action to relieve distress and poverty: Old age pensions, sickness and unemployment insurance; Lord Beveridge and 'social security'.

Chapter XI

IRISH

It is suggested that, in the first year, at least, of the Irish course short, frequent lessons of, say, 15 – 20 minutes would be preferable to longer periods of instruction more widely spaced. The children would thus benefit from frequent practice in the new medium, class-work would tend to be more lively and vigorous, and the rate of progress could be more easily controlled. At all stages, the work should be mainly oral, and should include a variety of types of work, such as salutations, dialogues, stories, songs, rhymes, games and simple dramatic work. Visual aid material should be widely used at all stages. No formal treatment of phonetics or grammar should be attempted; correct pronunciation is most easily acquired by imitation of the teacher's speech, and grammatical forms are most easily assimilated by the repetition and manipulation of model phrases and sentences.

The child should learn to express himself naturally and fluently without being preoccupied by complications of grammar. He should, therefore, begin by learning such phrases and sentences as express ordinary greetings, instructions and requests. He might then proceed to reports of simple news items, the narration of events and of actions performed, and descriptions of the classroom, the home, the street, the village. Each sentence should be accurately memorised, and the growth of the vocabulary should be gradual and carefully controlled. While it is important to encourage the habit of thinking in the new language as early as possible by establishing an immediate and direct bond of meaning between a new phrase and the idea which it represents, the teacher should unhesitatingly have recourse to a simple explanation in English in cases where the relationship between phrase and idea cannot otherwise be easily established. It is also important that sentences learnt should be closely connected with the child's everyday experience. Once a sentence has been memorised it will be possible to add variety to the work by 'ringing the changes' on verbal forms, pronouns, nouns and adjectives while still preserving the original mould of the sentence. Thus the child will, in a natural and uncomplicated way, learn the appropriate use of Is and Tá, the use of verbal forms in the affirmative, negative and interrogative of the different tenses, and of such inflected forms of nouns, pronouns and adjectives as are necessary for the expression of his ideas.

Grammatical functions need not be treated in any systematic or graded sequence; they should be dealt with incidentally as the need for them arises in oral work. When the child has acquired a reasonable facility and confidence in expressing his ideas, he should be encouraged to build up phrases for himself on the pattern of those already learnt, and thereafter should co-operate in the building up of dialogues, conversations and stories, and, eventually, something in the nature of playlets.

During the first year some preparation for reading might be undertaken, the blackboard, flash-cards, sentence-strips and matching word games being used as aids, but, generally speaking, the use of a reading-book should be deferred to the second, or even to the third year. In the second year, most children will probably have advanced sufficiently to begin formal reading from an easy text-book. The vocabulary encountered in this reading matter should already be familiar to the children as a result of oral work. No new material should be presented in a reading lesson without adequate oral and visual preparation.

When reasonable fluency in reading has been attained, non-cursive writing can be introduced. This links up naturally with the teaching of script-writing in the English course. Until letter-formation has been satisfactorily mastered, written work will consist mainly of copying from the blackboard. But as soon as possible thereafter a more varied type of exercise should be attempted; this can include the writing down of items of everyday interest, suitable vocabulary exercises, the writing of sentences descriptive of actions or pictures, and the keeping of news sheets and weather charts, all of which are a valuable preparation for written composition at a later stage in the child's education.

Appendix I

ENGLISH

MANY of the methods and activities advocated in the teaching of English in Primary 4 to 7 will be found suitable at this stage. It is not considered necessary to repeat what has been fully treated elsewhere. Teachers of senior pupils are advised, therefore, to familiarise themselves with the content of the programme recommended for Primary 4 to 7.

At the senior stage, as in preceding years, a clear appreciation of the individual pupil's difficulties is essential if his powers of expression and understanding are to develop satisfactorily. Since the course is a consolidation and development of previous work, the teacher should acquaint himself with what the children have done in English in earlier years. In some cases remedial teaching will be necessary. The need for this may be most apparent in reading, but in speech and writing, too, individual weaknesses will often call for special attention.

The pupil will probably display some of the characteristics usually associated with adolescence: a growing independence and desire to work on his own; a heightened awareness of the world around him and the part he may be called upon to play in it; the emergence of fairly stable specific interests and aptitudes; and an increasing wish to understand the purpose behind the tasks he is required to perform. Mental differences between one child and another now become more apparent; the range of concentration widens; and a greater power of dealing with verbal concepts is revealed. Skilful teaching will ensure that scope is given to these important developments. There should, for example, be facilities and opportunities for independent study; the practical application of English in the affairs of everyday life should be stressed; and the reading material available and the activities pursued should reflect a wide range of interests, some of which will extend beyond the school. Provision for pupils of different mental ability will be necessary and enterprise and versatility of treatment will be essential if differing aptitudes are to find satisfaction. Finally, to secure a steady advance in attainment and an increasing degree of thoroughness and accuracy a constant effort should be made to stimulate the pupils' interest and curiosity, their pride in achievement and the habit of self-criticism.

ORAL EXPRESSION

The improvement of the pupils' speech will remain a matter of the first importance. As before, the major aim in speech training should be to develop facility and correctness in the speech of daily life; all speech activities should be designed to promote this end and be vitally related to it. Wherever possible the teacher should seek to create situations in which the children will see the need for clear and expressive speech.

The opportunities which oral work provides for training in the elements of social behaviour should be seized. Pupils should have practice in performing the common courtesies of daily life, in making requests, offering apologies and paying compliments, making and answering enquiries and introducing a speaker or a stranger. Consideration for others and a willingness to listen to different points of view, the foundation of true courtesy, should be inculcated.

With modification, many of the methods suggested for pupils in Primary 4 to 7 will be found useful. Practice in conversation, in giving instructions, in description and in narration should be continued.

Conversation

Questions and impromptu conversations between pupil and teacher will be stimulated if the classroom presents an interesting appearance. A display of models, newspaper cuttings and pictures may provoke discussions on hobbies, current affairs and careers. In oral lessons opportunities for natural and easy conversation between teacher and pupil should be frequently created. The preparations for a class activity, such as a project, a visit, an excursion or a concert can also be the occasion for purposeful conversation. Perhaps at this stage greater use will be made of conversations based upon imagined situations – telephone conversations, conversation between shopkeeper and customer or parent and child, interviews between employer and workmen. Normally it will be sufficient for the teacher to outline the situation, its development in speech being worked out by the children. If successive groups attempt the same task, opportunities for criticism and further discussion are created.

Lectures and Talks

Brief lectures and talks, followed by questions and class discussion, should be given by individual pupils on topics which they know well. The aim should be to train the children to express themselves on familiar subjects clearly, fluently and consecutively. The range of subjects is inexhaustible and it is possible to indicate only a few. The

children may give accounts of first hand experiences, places visited, and things seen, heard or made. Alternatively, they may describe common objects and processes in the school, home or farm, explain the working of everyday appliances, or state how they would act in a given situation. To ensure that the topic is related to the child's interests the choice should normally be left to him.

Narration

Opportunities should also be provided for practice in continuous narration. Pupils may be asked to reproduce a story or to re-tell a well-known story from the point of view of one of the characters. Other valuable exercises are the completion of a story from a given beginning or ending and the construction of a story from certain specific data.

Debates

With an advanced class a beginning may be made with debates. The topic should be carefully chosen. It should have a definite appeal to the children and fall within their range of experience. Group discussions, with the class divided into a number of sets, each with its own chairman who subsequently reports the findings to the whole assembly, have also proved profitable.

SPEECH

Training designed to bring about improvement in the more mechanical elements of speech – articulation, pronunciation, intonation and phrasing – should be continued. This work should be vitally related to the actual needs of the pupils and its value judged by the improvements effected in their ordinary speech.

The first essential is that the pupils should be made aware of the need for good speech. By steady insistence at all times upon good speech, whether the child is answering a question, reading, speaking or acting, and by ensuring that the pupils have experience of a variety of speech practice, this awareness can be created.

Some consolidation of previous work will be necessary. Speech games and patter rhymes, carefully selected with a view to their suitability for older children, will be found valuable in improving articulation and pronunciation. Variety of intonation can be developed by asking children to repeat single words and short phrases in a number of ways to suggest various intentions and implications. Speaking to people near or far-off helps to secure variety in tone and volume. In addition there will be abundant practice in reading aloud, making announcements, story telling, discussions and interviews. Work based on radio techniques such as those employed

for older children in Children's Hour can prove valuable, especially if there is a microphone attachment to the radio installation.

DRAMA

Dramatic work should find a place in the curriculum for, as in earlier stages, it has a valuable contribution to make. With modifications, the methods and activities recommended for previous years should be continued.

There should be practice in the miming of everyday activities and situations and in the spontaneous dramatisation of common incidents. Care should of course be taken to ensure that, in the selection of incidents and situations, a suitable progression is maintained. Whenever possible the children should be encouraged to write their own plays. This is a valuable exercise which introduces the pupils to the conventions of drama and some of the problems of stage-craft. Material for this exercise will be readily found in school broadcasts, in poems and stories, and in Biblical and historical incidents.

Many collections of plays for children are now available. For dramatic work they are usually less valuable than plays composed by the children themselves along the lines indicated above. They can, however, be profitably used for developing expression in oral reading and for acquainting the children with some of the aspects of dramatic technique.

At this stage a higher standard of performance in acting will normally be expected. Greater skill in gesture and movement and in ability to reveal character and feeling through speech and facial expression should be possible. This development should not, however, be imposed upon the children from without. It should be a natural and individual growth, attained mainly by the children themselves through the exercise of their powers of imagination and observation.

The culmination of dramatic work in the school might be the acting of parts of Shakespearean plays. Although a great deal of Shakespeare's work is beyond the comprehension and experience of most of these children an attempt at acting suitable scenes or episodes from his plays might be made in schools where conditions are favourable. The teacher should have a genuine interest in Shakespeare and in the production of his plays, and the pupils should have had varied and extensive dramatic experience with simpler material. Enjoyment should be the main aim. Attention should be directed chiefly to the action and to the simple presentation of character rather than to the analysis of motive and the elucidation of difficult passages.

Modern one-act plays may also be studied during these years with a visit to their subsequent presentation at school concerts.

Most dramatic work will normally take place in the classroom. Advantage should be taken of extra space when it is available, for example in a hall or, if circumstances are favourable, out-of-doors. A large playground is an advantage when a number of groups are rehearsing simultaneously. Occasionally, especially in larger schools, a full scale production of a play will be possible. This is an activity which transcends the conventional bounds of school subjects and in the making of properties, costumes and scenery affords scope for a variety of talents.

POETRY

As in the preceding years poetry should be read to give the children enjoyment.

In the choice of poems to be read the teacher will be governed by his own response to poetry and by his knowledge of the children's interests and experience. Various types of poetry should be available. Most children at this stage enjoy ballads and narrative poems but have a dislike for fairy poems. Poems reflecting the quieter moods of nature often make an appeal to girls; boys, on the other hand, find pleasure in poems that tell stirring deeds in a well-marked rhythm. Lighter verse and poems dealing with contemporary interests should also be read. Although many of the greatest English poems are outside the range of the pupils' experience, some of the children should be introduced to the simpler and better known poetic masterpieces; their immediate appreciation of a poem may be incomplete, but subsequently their understanding of it is often deepened and enriched.

In his treatment of poetry the teacher will be guided by the nature of the poem studied. As before, some poems may be dramatised, some may be illustrated by the children, and others may be spoken in chorus or in parts. Sometimes poems may be treated mainly as topics of discussion; occasionally the reading of a poem will make its own appeal without any comment by the teacher. If the children display a special interest in the career and personality of a poet whose poems they enjoy, they may be encouraged to enlarge their knowledge by private reading and research.

Choral verse-speaking can be useful as an aid to the enjoyment of a poem and is a valuable communal experience, but care should be exercised in the choice of poems for this purpose. They should, for instance, be corporate rather than personal in sentiment. To obtain the best results from choral work it is advisable that the poems be

learned by heart. Memorisation, one of the later stages in the treatment of a poem, need not be a dull and laborious task; it should not be regarded as an end in itself but as an act of appreciation. A place may sometimes be found for solo recitation. Whenever possible, the recitation of poetry should take place naturally; the expressive reading of a poem will be readily forthcoming, for example, if a programme like Children's Hour is arranged or if it appears as an item in a classroom concert or a social function. Sometimes the children may be encouraged to read or recite to other classes from anthologies of poems which they have themselves compiled. Shy and self-conscious pupils should not be required to recite alone, but should be encouraged to take part in choral verse-speaking until they gain in confidence. Some children may wish to compose their own poems and should be given every encouragement to do so; the exercise gives scope for the children's creative ability and helps them to appreciate some of the problems underlying verse composition.

READING

The pupils should have practice in intensive reading for detailed comprehension, in reading for information, in reading aloud and in reading for entertainment.

The ability to comprehend accurately what is read is an essential skill in modern life. The pupils will already have had practice in applying their reading skill in this way; this type of work should now be intensified. The material studied should include factual statements as well as fiction. The teacher's main task is to see that the pupils have thoroughly grasped the substance of the passage. They may, for example, be asked to summarise it in their own words, make an intelligent comment upon it, or carry out the instructions given in it. The extension of the pupils' vocabulary and the development of their control of the written language by an examination of the author's arrangement and expression of his ideas may also receive attention.

Reading for information is an extremely valuable exercise. The need to use books to throw light upon a particular problem often arises and the ability to extract with ease what is required has definite value. So far as possible, this form of reading should originate from and be conducted by the pupils themselves; they should put forward the problems and questions and find out the answers. They may, for example, wish to collect material for a brief lecture or for some centre of interest, or require further information about a topic that arouses curiosity, or want to follow up a school broadcast or study some current event. At times the teacher's assis-

tance will, however, be needed; he may have to explain the use of indexes or tables of contents, or show how to skim over and discard what is irrelevant or take steps to improve speed in silent reading. Sometimes, from his knowledge of the pupils' current interests, he may himself propound questions and leave them to search for the answers. Some testing or supervision of this type of reading is usually necessary, but the tests should have a stimulating effect upon the pupils and show the teacher where further assistance is required. If work of this kind is to be possible, a varied and extensive collection of reference books is necessary. Dictionaries, encyclopaedias, year books, guides, periodicals, technical articles, are the sort of material needed.

To be able to read aloud clearly, intelligently and expressively is a pleasant accomplishment and often serves to bring the printed page to fuller life. Time should, therefore, be given to oral reading. Routine, purposeless reading in turn round the class is strongly deprecated; it is a time-wasting, profitless and unimaginative occupation. Instead, the exercise should have some distinct and definite aim: to develop clear and correct but natural enunciation, to encourage greater variation in pace or tone in reading, to promote the ability to differentiate between one speaker and another in a passage of dialogue, or in some other way to bring out the author's full meaning. The extracts to be read aloud should be carefully chosen and rehearsed; speeches, plays, dramatic versions of stories and certain types of verses are eminently suitable. The class should be trained to listen critically and to assess how far the reader has attained his aim.

To help the pupils to acquire a genuine liking for books so that they may find in them a never failing source of pleasure and satisfaction is one of the most valuable services a teacher can perform. Much is required of him if he is to discharge this duty successfully. He must know the interests of his pupils. He must endeavour, by visiting the children's section of bookshops and by studying reviews and lists of contemporary children's books, such as those published by the School Library Association, to acquire an up-to-date knowledge of the books that prove popular with children. He must also read as many as possible of these books himself, so that when occasion offers he can speak confidently about them or select an extract that will appeal. He must be sincere and enthusiastic and able to lay aside his own prejudices. Finally, he must be willing to allow the children time to read on their own.

Plenty of books of the right sort, suited to the age, ability and interests of the pupils are required. There should be books on

hobbies, sport, adventure, travel, nature study and discovery, some examples of contemporary fiction, some of the classics in attractive editions and some technical books or periodicals for those with practical interests. As many as possible of these should be in the school or class library. There should, moreover, be close association with the public library service, which the pupils should be encouraged to use.

Backwardness in Reading

Some pupils will, undoubtedly, be retarded in reading; it may even happen that a few cannot read at all. To help such children demands not only sympathy and resourcefulness but a great deal of individual attention and a knowledge of modern techniques. The teacher should do all he can to discover the causes of the trouble. They may be physical or psychological or arise from the use of unsuitable methods. But his main task is to secure the pupil's trust and co-operation and re-establish his confidence in himself. If the child can realise that there is something he can do well – either in games, or music, or art, or even in the carrying of messages – a big step towards the building up of his self-esteem will have been taken. The conviction that he can read and that reading is personally worthwhile has then to be created. The importance of a wise choice of reading book or reading material becomes clear. It must be within the child's reading ability and reflect his interests.

For a beginning the pupil's 'Reading Age' should be ascertained by means of standardised reading tests. Books of suitable difficulty can then be selected. They should have a controlled vocabulary, adequate repetition and attractive illustration and should contain material suited to the age and interest of the pupil. The teaching should be bright and stimulating. Much reading aloud and discussion of the passage read, followed by written work, will be necessary.

With seriously retarded pupils use should be made of modern techniques of teaching reading to beginners. Card games, pictures with detachable word slips, flash cards and labels can all be used to establish a minimum basic reading vocabulary. Only later should the pupil attempt a book.

WRITTEN EXPRESSION

In his approach to the teaching of written expression the teacher's main task is to see that favourable conditions exist. He must ensure that the pupils have material to write about, that they see some purpose in writing about it, and that they have some knowledge of the technique of written expression.

The extension of the pupils' knowledge, experience and interests is a valuable aid to the acquisition of facility in expression. A plentiful supply of suitable books, a variety of activities which broaden experience and a stimulating and attractive environment with a friendly atmosphere are the chief means by which the teacher can seek to widen the knowledge and interests of his pupils.

Enthusiasm for writing grows when the children see that some purpose is to be served by putting their thoughts in writing. The work lacks significance to them if it mainly consists of a series of essays on an apparently haphazard assortment of subjects. When, on the other hand, the teacher uses or creates situations in which the need for writing arises naturally and inevitably the children find real purpose in the exercise. If the general life of the school is vigorous and many-sided a number of such situations will lie ready to hand. Letters will have to be written. They may be business letters, dealing with preparations for a visit or excursion or requesting information, samples and catalogues bearing upon some project or centre of interest. Or they may be friendly personal letters, addressed to some pen pal or the crew of an adopted ship. Notices and posters announcing school activities will have to be prepared – a job involving both English and skill in design and painting. Agenda may have to be drafted and the records of debates, lecturettes, visits and excursions compiled. There are certain official forms which even school children have to know how to complete. Other forms which they will probably meet later in life may be brought to their notice, or the teacher may devise his own incorporating details common to most forms.

In addition, the teacher will no doubt think it advisable to create further occasions for purposeful writing. He may ask the class to write a book around a particular theme, each pupil or group of pupils contributing a chapter or section. Loose sheets of paper rather than the ordinary exercise book should be used for these contributions. They can then be arranged, indexed, illustrated and if necessary bound, to produce an attractive volume. The teacher's knowledge of his pupils' interests and local circumstances will guide him in the selection of a topic; if possible the choice should be made by the pupils themselves, the teacher giving advice on treatment and approach. Thus, some of the pupils could produce a book about a local place of interest or about the history of the town or school. Other books could contain a collection of stories or plays or character sketches, real or imaginary, or deal with the pupils' interests, such as stamps, aircraft, railways or footballers.

The production of a class magazine also affords abundant oppor-

tunities for purposeful writing. In the variety which a magazine presents there is something to appeal to the interests and tastes of a wide range of pupils. A lively magazine will reflect the various aspects of the school life and that of the outside world so far as it impinges upon the school. Book and film reviews, nature and fashion notes, verse, short stories, puzzles, jokes – there is room for all these. Advertisements should also be included; the writing of simple captions to accompany them is an exercise within the scope of most of the weaker pupils.

The writing of the script for a 'Children's Hour' programme is a similar type of exercise. The children should be encouraged to put forward their own ideas about the items they wish to contribute. These may include a short story, an episode in a serial, competitions, verses and announcements.

If pupils are to succeed in setting out their thoughts adequately and in ordered sequence, systematic training in the mechanics of written expression and in the arrangement of ideas will still be necessary. Much individual as well as class teaching will be required; to be successful this teaching must be closely related to the needs and interests of the individual pupil as shown in his written work.

Particular attention should be paid at this stage to the arrangement of ideas. Sometimes the teacher may in discussion with the class draw up a plan; at other times examination of the structure and arrangement of paragraphs in a model passage will prove helpful. Previous work in punctuation and sentence structure should be consolidated and developed and a persistent effort made to enrich the pupils' vocabulary. Spelling should continue to receive attention along the lines recommended in the programme for Primary 4 to 7. Progress will be facilitated if the pupils are trained to examine their own writing critically. Reading aloud by pupils of their own work, followed by class discussion and criticism, usually proves helpful.

Written exercises for backward pupils should be simple and within the range of their ability and interests. They may be given a picture with a few questions attached and be asked to write the answers. A more difficult occupation is to write about a picture or a series of pictures, which might be of their own choice and be pasted by them in their work books. The writing of simple sentences or phrases for advertisements and posters is also a suitable exercise.

GRAMMAR

In teaching grammar the aim is to develop correctness in the use of the language in speech and writing. Difficult grammatical terms and elaborate definitions should be avoided.

Some grammatical mistakes will be dealt with incidentally; others will require a fuller and more systematic treatment. The teacher will be in a position to decide which approach is suitable.

In order to assist in the discussion of correct and incorrect forms certain grammatical conceptions should be specifically taught. To those included in the Programme for Primary 4 to 7 the following should be added: the distinction between adjective and adverb; degree in adjectives and adverbs; the demonstrative pronoun and adjective.

Appendix II

MATHEMATICS

These classes will often contain children who will later attend a technical intermediate school, and perhaps children who as a result of the Review Examination will make a late entry to a grammar school, but most of the pupils in them will have no further formal education after leaving the primary school. For all these groups it would appear wiser to provide as wide a course in Mathematics as possible, instead of concentrating, as is often done, largely or entirely on the development of computational skill in Arithmetic. For most adults the arithmetical process-mastery actually necessary in everyday life is less than that aimed at in the normal school course, but on cultural and civic grounds there is need for the power to deal intelligently with numbers over a fairly wide field. An adult should be able to use a time-table properly, to study a price-list and base sensible decisions on it, to understand a demand note for rates or an electricity bill; if he is to be an intelligent voter he should find meaningful the statistics published in the papers and be able to check the inferences drawn from them. The last point, and the increasing attention paid to the variation of one quantity with another and to rates of change, make a case for the inclusion of Graphs, a case that is strengthened by the mathematical interest of the topic itself. In Algebra it will not be possible to proceed far enough for the power of the symbolism to be properly appreciated and there is little to be said for the development of apparently meaningless manipulation, but at least the generalised Arithmetic should be carried as far as the construction and use of simple formulae. The study of spatial relationships begun lower down the school should be continued, largely in an intuitive and experimental manner, but with increasing emphasis on reasoning, and applications may be made in scale drawing and simple surveying.

Possible developments of these subjects are given below, but three points should be borne in mind when they are being considered.

(*a*) Although for convenience the subjects are discussed separately they should not be taught separately, but should be fused into a coherent course, in which the arithmetical, geometric and algebraic interests of a particular topic might all be investigated side by side or consecutively.

(*b*) The range of topics covered is far too large for a school to attempt them all. Each school should plan its own course or courses, bearing in mind the capabilities and interests of the pupils, the time available, and the particular circumstances of the area. There will be wide variations in ability and achievement among the children, and provision must be made in the planning for group working.

(*c*) In many schools the boys will have more mathematics periods than the girls. For these extra periods a separate and self-contained course of topics of particular interest to boys should be planned.

TABLE OF SUGGESTED TOPICS

Items marked * should all be included in any course planned.
Items marked † should be included if at all possible.

Arithmetic

* Consolidation of earlier work.
* Practical applications of percentages to everyday affairs: hire-purchase, money-lending, Savings Accounts, shop discount, etc.
* Calculation of averages.
* Household and other accounts: shopping, rent and rates, gas and electricity accounts, wages.
† Rate – i.e., one quantity varying with another, as in speed, miles per gallon, etc.
† Ratio and proportion.
* Mensuration (rectangle, triangle).
Mensuration (circle, cuboid and cylinder).
Practice.
Non-terminating decimals.
Factors, prime numbers, index notation.
Square root by factors.
Square root.
Logarithms.
Metric System (as far as required in the teaching of Science).

Graphs

* Reading and construction of simple statistical graphs – isotypes, pie-charts, bar graphs; extension of this work to continuous graphs.

Geometry

† Angles, use of protractor and set square.
† Parallel lines.

† Triangles – study of different types; construction, leading to idea of congruence; angle sum; Pythagoras' Theorem.
Sides, diagonals and angle-properties of squares, rectangles and parallelograms.
Circle – simple angle facts.
Similar figures – plane and solid.
Simple surveying.
Simple numerical trigonometry treated practically.

Algebra

† Generalised arithmetic.
† Directed numbers.
† Simple equations, as needed in solution of easy problems.
† Construction and use of simple formulae.
Easy simultaneous equations.

ARITHMETIC

New Processes:

Some of the topics in the list above involve no new processes. The new processes that *are* involved consist of:

Percentages
Averages, rate, ratio and proportion
Practice
Non-terminating decimals
Factors, prime numbers
Square root by factors
Square root
Logarithms.

This list of processes is not extensive, and where necessary may be reduced. As the majority of the pupils left in school will not be academically minded, a wide range of application is more important than an extended range of processes; applications are discussed below.

The treatment of percentages should emphasise their fundamental identity with decimal and vulgar fractions, and the notation 'per thousand' should also be introduced. The work on factors and index notation is valuable for the insight it gives into the number system, and it need not be elaborate; tests of divisibility are worth including. Square root can be introduced when it is needed for mensuration.

With non-terminating decimals, which arise naturally in such processes as the decimalisation of money, the main emphasis must be on sensible approximation, and the number of significant figures

worth retaining in the answer when working with approximate quantities is worth more consideration than it normally gets.

Average, rate, ratio and proportion are important enough to warrant much practical illustration until the concept becomes established – rate, involving the ratio of continuous quantities, is a difficult concept and suggests a correlation with graphical work, while ratio and proportion have obvious geometric illustrations.

Quite slow children can work with logarithms, taught purely as a computational aid, with both pleasure and profit, but it is of course more valuable if the procedure can be built up in an intelligible manner on some graphical basis.

Applications

At this stage it is generally appropriate to explore all the mathematical possibilities of a situation rather than to seek illustration of a single mathematical process. One main field of application will be the mensuration of the shapes and solids discussed in the Geometry course, and the application of the rules evolved to a variety of situations. A second will be to money matters – household budgets, savings, insurance, and the civic arithmetic of rates and taxes. Savings would of course involve the notion of Interest, and a discussion of the more familiar methods of thrift. There will also be more opportunist work based on material provided by the daily press; much valuable work can be done on the statistics provided there.

GRAPHS

The technique of drawing graphs and the concepts involved present sufficient difficulties to make a case for the study of given graphs as a first stage. Isotypes, pie-charts and bar or column graphs make an obvious beginning, and it is worth while having a number of them and examining them in detail. The pupils can collect examples from posters and the press, these examples to be discussed and filed. The discussion should cover the height of the columns, leading to the idea of scale, the significance or otherwise of the intermediate points and the ratios of column heights. When this groundwork has been covered the construction of graphs by the pupils themselves can be undertaken with less danger of the purpose being obscured by the technical difficulties. It should always be borne in mind, however, that a graph should be drawn so that it can be used, and not as an exercise in graph drawing. It may represent a table of figures in a form more comprehensible than the table itself (column graph), illustrate some steady fluctuation (elevation of sun at mid-day),

serve as ready-reckoner (Fahrenheit/Centigrade graph) and eventually illustrate rates of change and functionality (distance/time graphs, squares of natural numbers, etc.).

The collection of material for graphical work offers an interesting field for individual and collective effort. It can be obtained by calculation, by observation (temperature, rainfall, length of shadow), by simple classroom experiment (times and amplitudes of pendulum) or by consulting reference books such as the *Annual Abstract of Statistics*, *Whittaker's Almanack*, railway time-tables, etc., an important aspect of library work. The careful discussion of the completed graphs can be very valuable, both as an exercise in expression and for the development of mathematical insight.

GEOMETRY

The course may be regarded as an extension of that given in the section Primary 4 to 7, under the heading Spatial Knowledge. Its objective is a familiarity with the basic facts, and the ability to use them in practical problems. The emphasis on use can be laid by linking the work with the drawing necessary to Woodwork and other crafts and with some aspects of Geography, and by undertaking such environmental work as simple surveying. Practical work of this sort can serve to introduce and illustrate many of the facts and relationships needed; but much of the material can be studied more directly with both interest and profit if a suitable approach is adopted. This approach should be experimental and intuitive, taking for granted all that appears self-evident; but there will still be room for abstraction and generalisation. For example, consideration of the measurements necessary for the reproduction of a given triangle leads naturally to the equality of all the triangles constructed from these measurements, and so to the conditions for congruence. Also, although Euclidean rigour would be out of place, there will be occasion for deductive logic. Children do not have to be academically minded to find the demonstration of the angle-sum of a triangle with the aid of parallels more convincing than measuring and fitting, valuable as these are, and there are demonstrations of Pythagoras' Theorem intelligible to all but the very dull.

Mechanical Drawing is an obvious field for geometrical work, but it has certain dangers. Its primary value is not in the development of skill in the use of instruments, though this is important, and a steady improvement in technique should be manifest over the course; it lies rather in offering a practical field for the exercise of intelligence and ingenuity, and the course should be so planned that these qualities are involved throughout. The general aim is the ability to

measure solids and represent them in two dimensions ('top', 'front' and 'side' views), and conversely the ability to visualise the solid from these conventional representations. In the early stages the models should be available for measurement, and should be of such size that scale drawing is not necessary; the objects used later on can vary with the environments and interests of the children. Work of this sort can be easily graded to suit the abilities of the pupils.

Simple surveying possesses similar advantages and has a larger practical content. The plotting of boundaries by the various elementary means available, levelling, and the finding of inaccessible heights and distances can provide challenging problems at almost any level of difficulty. The instruments used should be home made, not only on the grounds of economy but also because with home made instruments the principles involved are more obvious than with more elaborate apparatus. When graphical solutions to problems of height and distance are familiar the economy and simplicity of trigonometric solutions will be appreciated. Much can be done with one ratio only, a home made graph serving as the table.

ALGEBRA

The work begun lower down the school on generalised arithmetic should be continued and extended. The notation ab, x^2, y^3, etc., can be introduced in due course, and simple formulae developed, e.g., g gallons of milk at p pence a pint cost $\frac{8gp}{12}$ or $\frac{2gp}{3}$ shillings, and formulae can be used to express results in mensuration. The making and interpreting of formulae is more valuable than practice in substitution, though this must be given, and any transformations used should be very simple. When familiarity with literal symbols develops, the reduction of a problem to a simple equation can be tackled, and the technique of solution worked out.

Appendix III

GEOGRAPHY

THE treatment of Geography in these classes should continue to be mainly non-academic; its aim should be to foster and maintain interest in the subject and it should deal with the particular rather than the general. It will continue to be mainly descriptive, but not entirely so; the need for explanations will arise, and should be satisfied as far as possible within the child's ability to understand. Most of the pupils, however, will leave the school to start earning their living, and for them these remaining years will probably be their last period of systematic education. The teacher must take this factor into consideration when he is deciding on the content of his syllabus, by making sure that no really important topics or areas are neglected. For the same reason, it is important that the children should receive some training and practice in methods of obtaining information for themselves. The teacher should therefore include teaching methods which serve this end, e.g., 'library' methods, and also those which tend to develop such qualities as leadership, a sense of responsibility and the spirit of co-operation, e.g., 'group' methods.

It will be appropriate for the Geography course to continue along the lines already suggested, the local area, the British Isles (with special emphasis on Ireland) and the remainder of the world being considered as the three fields of study. It may therefore be regarded as an extension of the course followed up to Primary 7. The teacher will build upon the work already done, his aim being to deepen the knowledge and understanding of geographical facts and principles which the children have already acquired, and to extend their knowledge by the inclusion of new material.

It will be an advantage to formulate the sort of attainment one might reasonably expect at the end of the child's career in this type of school before considering the content of the course in detail. In addition to the knowledge and geographical skills gained in the junior classes the pupils may be expected to have acquired the following:

(*a*) *Local Geography*

A more detailed first-hand knowledge of the school locality, arrived at incidentally as a result of their study of additional topics. This should lead to a greater understanding of the setting and

relationships of the local area with regard to the remainder of Northern Ireland.

(*b*) *British Isles*

A more detailed knowledge of the geography of the British Isles, particularly of Ireland. It is not considered necessary that the whole of the area should have been covered regionally, but the children should have supplemented their previous studies by including the main aspects of the geography of the chief industrial and agricultural areas; and thus have acquired a good general knowledge of the resources and occupations of the British Isles, the positions and importance of the chief towns (including the main items of trade of the chief ports) and the principal lines of communication.

(*c*) *World Geography*

An elementary knowledge of the movements of the earth as a member of the Solar System is necessary in order that the children may understand the causes of day and night and the seasons.

The areas which the children had studied by the end of Primary 7 should have been supplemented to include those parts of the world which the teacher considers to be of most importance to them. This should lead to an appreciation of the diversity of climates and products to be found on the earth's surface and a knowledge of the distribution of the main climatic and vegetation regions. It should also lead to the realisation that areas which differ in climatic conditions are, to a great extent, interdependent, as also are industrial and non-industrial countries, and highly organised and undeveloped societies.

(*d*) *Tool Knowledge*

The children should be familiar with, and able to use and understand, the types of maps and diagrams which are in common use. These include large and small scale Ordnance Survey maps of the local area, atlas maps, wall maps and the globe. They should also be able to express their geographical knowledge by means of simple original sketch maps and diagrams.

(*e*) *Physical Geography*

A knowledge of the effects of river action in modifying the landscape, i.e., by erosion and deposition; the water-table, springs and wells; the formation of sedimentary and igneous rocks; volcanoes and earthquakes.

This list of 'attainments' is not intended to be exhaustive, but should be regarded rather as representing a common minimum suitable for the majority of unreorganised primary schools in Northern Ireland. The third and last sections in particular are cap-

able of expansion, and teachers should not feel restricted by them. For example, there is no mention of eclipses, yet the occurrence of an eclipse might easily create a demand for an explanation which should not be withheld because it is not in the syllabus; schools situated in drumlin country might legitimately wish to make some study of the effects of glaciation on landscape, and they should do so, although the effect of ice action is not specifically mentioned above; the pupils of a school having in its neighbourhood a large quarry exhibiting folding or faulting of strata, should not be debarred from considering the part played by folding and faulting in mountain building, or the formation of rift valleys, if they express interest in such studies. Similarly schools situated on the coast might extend the syllabus to include marine topics, and rural schools to a consideration of types of soils.

Most of the knowledge listed under (*d*) and (*e*) above will be acquired by the children incidentally, in the course of the work they do under the headings (*a*), (*b*) and (*c*). The remainder of the additional material which forms the content of these final years of the course may therefore be considered under these headings, but it should be borne in mind that these three fields of study are not mutually exclusive and that many topics may, in practice, be dealt with under any two or all three of these headings.

(*a*) *Local Geography*

The school locality should be regarded as an area where the operation of geographical factors may be studied at first hand, and as a training ground for map reading and making, rather than as a specifically defined area of which a detailed and thorough study should be made. If the children are to have practice in using a one-inch Ordnance Survey map they will need to go farther afield than the immediate neighbourhood of the school, but this should be quite possible, for children over twelve years of age are able to walk a considerable distance and many will have bicycles.

The taking of weather observations by the children should be continued, but, in addition to temperature and rainfall readings and wind directions, wind velocities may now be estimated with a fair degree of accuracy with the aid of the Beaufort Scale specification for land observations. This is given in the *Meteorological Glossary* (H.M.S.O.) and in many text books on Meteorology. The estimation of visibility is also well within the capacities of children of twelve years of age and over. If there is a suitable view from the school, a number of well defined and easily recognisable objects at known distances should be selected as visibility points, and used as a 'scale' by which to measure the visibility. Suitable distances would

be 50 yards, 100 yards, ¼ mile, 1 mile, 5 miles, 10 miles, 25 miles. Gate posts, isolated trees and buildings, chimney stacks, church spires and distant hills make suitable objects. The data obtained from all these observations may be expressed in the form of graphs and diagrams of various kinds, and comparisons of the records taken over a long period should prove interesting and instructive.

The local area is usually the best place for studying any aspect of Physical Geography. It must be remembered, however, that such studies should be made only when the need for them becomes apparent, and as an aid to a fuller understanding of Human Geography. The need for a study of river action, for instance, may become necessary in order that the children may understand irrigation in Egypt, the need for river control in California, or for dredging in the ports of Belfast and Londonderry.

In order to study erosion and deposition at first hand a stream should be visited preferably when it is in flood; the children will then actually be able to see the earth and other debris carried by the swirling water, and examine any deposits where the current slackens. Even if there is no convenient stream near the school the effects of erosion by running water may still be seen in the miniature gullies, canyons and alluvial fans formed in any heap of fine sand or earth after heavy rain. Once the children have seen these processes at work they will have no difficulty in understanding how valleys and flood plains are formed, and how lakes become filled up, why river deposits are graded and why the sediments laid down in water assume the form of horizontal strata. The value of studying river action before the formation of sedimentary rocks will be obvious.

(*b*) *British Isles*

The teacher will find little difficulty in deciding which parts of this area merit most attention. There may, however, be some divergence of opinion concerning the methods likely to be most suitable, and the position the study of the British Isles should occupy in the final years of the course.

The methods used must ultimately depend upon the teacher's preferences and the facilities at his disposal. Methods already mentioned in connexion with Primary 5, 6 and 7 will still be suitable, but as the time available for Geography may be limited they will, in the main, have to be methods which are economical of time. It may therefore be presumed that the majority of the periods allocated to Geography will be given to direct teaching. A methodical regional treatment, with the various aspects of the geography of each region being dealt with in logical sequence, would however be rather unreal, probably uninteresting and therefore out of place.

As direct observation is out of the question the best alternative should, if possible, be used, i.e., indirect observation, by means of pictures, sketch-maps and diagrams, specimens of raw materials and finished products. Pictures may be projected on to a screen, passed round the class for individual inspection or pinned up on the wall for examination. Of these methods, the first is by far the most effective, as the whole class can see the picture at the same time, and the teacher is able to direct attention to any part of the picture with the aid of a pointer, thereby ensuring that all his pupils can see exactly what he wants them to see at the same moment. Projection also makes it easy for the teacher and class as a whole to discuss the picture together. Where the class consists of only a small group of pupils the projected picture may not have any great advantage over one displayed on the wall, provided that all the children are able to gather near enough to get a good view simultaneously. Except when a ciné film is being shown, only a few well chosen and geographically significant pictures should be used during a lesson, rather than a large number which might lead to confusion. The pictures should form the basis for discussion, and each one should be examined thoroughly and, if necessary, in detail, before the next is produced. If used in this manner, not more than about six or eight pictures would normally be shown during a lesson.

If the children have been properly trained in map work the sketch map drawn on the blackboard will be a most valuable teaching aid. Sketch maps should preferably be drawn in colour and should be essentially simple; it is always better to draw several, each one to illustrate one or two features, rather than to over-load one map with a complicated mass of symbols and captions.

In all schools, collections of specimens of geographical significance should gradually be accumulated for use as illustrative material. The most useful specimens, from the point of view of teaching, are examples of common yet unfamiliar things, e.g., carboniferous limestone, sandstone, shale, rather than unusual or peculiar things like fossils or semi-precious stones. Agricultural specimens that do not deteriorate much with age, e.g., samples of cereals, should also be collected, and in fact anything that is likely to be of geographical interest. The samples should not, of course, be limited to those of British origin.

In deciding when the British Isles should be studied the teacher will no doubt take two considerations into account: first, that as this is the most important area for the pupils, and geographically one of the most complicated and difficult to understand, it should come at the end of the course; and secondly, that no pupil should

leave school without having made a fairly complete study of the British Isles. In schools where some pupils leave before reaching the end of the course, it will not be possible to satisfy both these conditions, but the teacher should be able to arrange to have covered the significant aspects of the geography of the British Isles before the first pupils leave. Teachers who decide to take Local Geography, the British Isles and the World concurrently, studying a topic in its local setting, in its application to the British Isles and also on a World basis, would probably be justified in refusing to alter this arrangement to suit the convenience of pupils who may leave before the end of the course.

(*c*) *The World*

A knowledge of the movements of the earth with regard to the sun may, of course, derive from the children's work in connexion with the local area or the British Isles as well as under this heading. If the school has a ciné or film-strip projector the use of one or more of the several films or film-strips on the subject will probably be the most effective method of dealing with it. Otherwise, the relative movements of the earth and sun must be demonstrated as far as possible with the aid of a globe and a lamp. While most children readily understand the occurrence of day and night, many of them find great difficulty in understanding the explanation of the seasons, and for this reason the topic should be returned to from time to time.

Probably the most important decision the teacher will have to make with regard to World studies is the determination of the parts of the world that are to be included in the course. If the aims set out above are to be realised the claim of any area to be included should be judged according to (i) its importance to the British Isles economically; (ii) its importance to the British Isles politically; (iii) whether or not it is densely populated.

When making his choice of regions, however, the teacher should also bear in mind the desirability of ensuring that they are fully representative of the main climatic and vegetation belts. These criteria will ensure some study of most parts of the British Commonwealth, North America and Europe and, if time permits, countries like Egypt, Burma and parts of the Argentine Republic and Brazil.

In making his choice of regions for study the teacher will also take into consideration the areas that were studied in former years, and the work that was then done by the children. It is therefore essential that a record of the pupils' work should be kept in sufficient detail to be of use for this purpose. The need for the most careful and detailed planning of the course will be obvious.

Appendix IV

ART AND CRAFT

THE Art and Craft course should be planned as a whole. It should aim at providing an outlet for creative and imaginative ability and at developing appreciation of good design and sound workmanship. It should afford opportunities for individual and group activities and give scope for both the naturally imaginative child and for the child with a more practical bent. As far as possible, the children's work in Art and Craft should be related to their work in other subjects.

DRAWING AND PAINTING

The child now becomes more critical of his efforts; he is anxious to achieve a standard comparable to that of adults and may lose confidence if he is unable to do so. The teacher should help him to gain further knowledge of the appearance and structure of things and to improve his technical skill. This is best done through exercises in drawing and painting from observation and memory; drawing from fellow pupils, from plant forms and still-life, from landscape and buildings will increase the child's knowledge and help to develop his feeling for colour, texture and form. Representational drawing, however, should not be treated as an end in itself, but as a means of increasing the child's capacity for imaginative expression.

Although the general tendency in imaginative painting at this stage is towards realistic representation, it must not be expected that all children will be interested in the actual appearance of things. The non-visually minded child draws what he feels rather than what he sees and is more interested in the emotional appeal of the subject than in its appearance. To convey his feelings he may use colour emotionally, without relation to nature, and may distort or exaggerate those parts of the subject which are to him emotionally significant. In proposing subjects for painting this difference of approach must be borne in mind; any subject proposed should be such that both the visually and the non-visually minded child will find some aspect of it which appeals to him. Generally, the most suitable subjects are to be found in scenes from everyday life, in dramatic stories or episodes from history or scripture and in scenes which depend upon their colour appeal.

The teacher should encourage the children to make a pleasing arrangement of the elements of their picture, but formal teaching

of the rules of composition would be premature. The examination and discussion by the class of good reproductions of paintings is helpful in this respect. Imitation of these works should, of course, be discouraged. Describing a picture or scene, so that the children can form a complete image of the subject in their mind's eye, is a useful way of leading them to form a clear idea of the whole picture before they begin to paint.

Many children will now attempt three-dimensional representation in their paintings and will wish to suggest solidity and recession. While there should be no formal lessons in perspective, individual help should be given to children who feel that their inability to cope with the problems of perspective is hampering their imaginative expression.

As wide a range of media as possible should now be used, including paint, pen-and-ink, crayon, pencil-and-wash, cut-paper and linoleum blocks.

PATTERN

All patterns should now be applied to some form of craftwork. Definite instruction in the elementary principles of pattern-making should be given and a higher standard of execution should be expected. Generally, patterns should show more invention, imagination and subtlety of shape and colour. Units based on conventionalised floral and pictorial forms may be introduced and applied to fabric printing, and to the design of brochure covers, end- and cover-papers, etc. Exercises in space-filling, using the circle, square and hexagon, should be set.

Exercises in the use of a well-proportioned single-stroke alphabet are desirable: this lettering may be used in poster-design and for school notices. Manuscript writing may also be introduced and used in connexion with book-binding.

The study of colour should be continued on the lines indicated for the previous stage.

CRAFT

The crafts which have been begun at the previous stage should be continued on progressive lines, but the child will concentrate on one definite craft. A higher standard of technique should be expected and the importance of good design and good finish should be stressed. In planning schemes of work the needs and capacities of the children must be remembered. It is most important that the crafts chosen for each class should be such as will make it possible for the children to reach a good standard of craftsmanship. Formal

instruction in the techniques of the traditional crafts will be necessary, but it should not be stressed to such an extent as to discourage the child. If he can be led, through his own experience, to see the need for improving his technique, he will readily submit to the necessary discipline.

The development of a good standard of taste is an important aim of all craft teaching. To this end specimens and photographs of well designed everyday objects and craftwork should be exhibited in the classroom, and the children should be encouraged to compile scrapbooks of examples of good and bad design. Visits to museums and the use of films and film strips are also recommended.

Appendix V

DOMESTIC SCIENCE

COOKERY

THE principal aim is to give a thorough training in the basic methods of elementary cookery. The greater portion of the syllabus should be devoted to the teaching of the fundamental processes, such as boiling, steaming and baking, all of which are involved in the preparation of simple meals. It will be recognised, however, that it would be undesirable to confine the work done in the cookery lesson to those problems which are closely connected with the preparation of meals. Questions concerning general household management, personal and kitchen hygiene, the prevention of accidents in the home and the first-aid treatment of minor injuries will all inevitably arise, and must be dealt with. In addition, those questions of personal hygiene which concern girls only will be most conveniently dealt with by the teacher of domestic subjects.

The choice and price of foodstuffs and the relative value of different foods in the diet must be broadly considered from the earliest lessons. The value of such foods as milk, butter, eggs, bread, meat and vegetables should be compared, and their respective functions indicated.

The following suggestions are offered to help teachers in the preparation of their schemes of work:

(*a*) The scheme of lessons should take into consideration the district which the school serves and the conditions in which the children live. Each lesson should be planned so as to make the best possible contribution to the pupils' needs.

(*b*) Short practical demonstrations by the teacher are necessary in most cookery lessons. Good demonstrations teach correct manipulation and cookery processes stage by stage.

(*c*) Care should be taken that the work is graded according to the difficulty it presents not only in understanding the process, but in actual manipulation.

(*d*) In the preparation of most lessons the teacher will make allowance for the introduction of fresh material, but some time will normally be devoted to practice in using tools and developing manipulative skill.

(*e*) The girls should be taught the use and maintenance of ovens, stoves and kitchen equipment in general.

(*f*) Pupils should be trained to work from recipe books.

(*g*) Revision lessons should have a place in the scheme. Their function is to review previous lessons from a fresh aspect, consolidating knowledge and removing misconceptions before proceeding to new work. Such lessons should give practice in variations of a familiar process and generally develop confidence and speed.

(*h*) When the teacher is satisfied that her pupils understand the basic principles of cookery, she should build the lessons round centres of interest which will widen the scope of her teaching and give the girls an added enthusiasm for their work.

The syllabuses outlined below may serve as a general guide to the teacher in drawing up her schemes of work:

First Year Syllabus

Tea, coffee, cocoa, milk drinks.
Toast and sandwiches (including the cutting and buttering of bread).
Salads: fruit and vegetable.
Fruit (including the cooking of dried fruits).
Root, pulse and green vegetables.
White sauce and custard sauce.
Eggs – poached, scrambled and fried.
Fried bacon, sausage, tomatoes, bread, cooked potatoes, apples, potato bread.
Bread, scones, plain cakes.
Introduction to the preparation and serving of simple meals from the above dishes.
Arrangement of flowers, leaves, etc.

Second Year Syllabus

Milk puddings – fine and coarse grains.
Soups.
Stews.
Fish – white fish and herrings.
Sauces.
Cheese dishes, e.g., cheese potatoes, welsh rarebit, cheese scones.
Reheated food, e.g., shepherd's pie, rissoles, fish pie, fish cakes, bread pudding.
Steamed puddings.
Batters.
Bread – oven and griddle.
Plain cakes.

Rich cakes.
Pastry – suet, short and rough puff.
Biscuits.
Preparation and serving of simple meals, including suitable meals for invalids and convalescents.

Third Year Syllabus

Girls who have completed the two-year cookery course before reaching school-leaving age should proceed to a third year course in cookery. It is felt that many girls would benefit by working variations on the second year syllabus. At a later stage it may be found possible to divide the whole class into groups, thus enabling the girls to prepare and serve a variety of meals.

NEEDLEWORK

The following outline may be helpful in drawing up a scheme of work for senior classes in unreorganised schools, when the course suggested in the general primary school Programme has been completed.

Sewing

Use of the sewing machine for making underwear and cotton skirts, etc.
Use of commercial patterns in making cotton dresses or blouses.
The making of skirts in woollen material.
Mending by patching and darning.

Knitting

More advanced knitting from printed instructions, pullovers, jumpers, cardigans, gloves, etc. The choice of these garments will depend on the ability of the child.
Crochet work.

Appendix VI

SCIENCE

THE aim of the course should be to give boys and girls who will soon be leaving school some understanding of the nature of science and its place in relation to their own lives and the life of the community. It will not, of course, be possible to undertake a systematic treatment of science with the limited facilities available in the primary school but it is desirable that all pupils should gain some idea of the way in which science affects their daily lives.

For many years the curriculum of all senior classes has included Hygiene – a simple study of the structure and working of the pupil's body intended to provide a scientific basis for the inculcation of good health habits. Furthermore, in a majority of schools either Nature Study or School Gardening has been taught as a practical subject, mainly to boys. A few schools with special facilities have attempted a more ambitious treatment of science, making an elementary practical study of physics and chemistry. In developing a new course, many teachers will be able to draw on their experience of teaching these subjects. They will also have the opportunity to approach the teaching of science along fresh lines, choosing aspects of the subject which lend themselves to a simple treatment without special facilities and which provide scope for independent inquiry of an elementary nature.

Carried out in this way, the Science course in the senior classes should first be a development of the Nature Study done at the primary stage, since there is no sudden change in the mental powers or interests of the child at the age of eleven or twelve years, although the gradual growth in general intellectual ability justifies an increasing emphasis on rational explanation.

Lines of Development

There are several possible lines along which a suitable course may be planned and some of these are described below. Whilst the content of the syllabus and the method of approach may vary from school to school all courses will include some study of elementary human biology. This will follow naturally on the more informal study of living things already undertaken in the Primary classes.

In a simple way the pupil can learn how his body works and what he must do to keep it healthy. These lessons will provide a valuable

link with Physical Education and Domestic Science, and they will promote a rational understanding of the rules of healthy living. It is in this way that the Science course can make its most effective contribution to Health Education. It must be stressed that with children systematic training is itself of much greater importance than the explanation of the reasons underlying it. Nevertheless, it is right, when opportunities occur, that the older children should be given a rational explanation for the rules of behaviour which are so widely insisted on. During the study of 'Air', for example, some explanation will be given of the function of the lungs, and here the question of ventilation can be considered, whilst under the heading of 'Water' it will be possible to show the ways in which water is purified and to discuss the dangers that arise from contamination.

Another line of development is possible in schools with a garden, where plants and animals can be studied and simple experiments carried out. In many schools the garden provides the most suitable place for experimental work and the teacher should make full use of this outdoor laboratory. Much useful basic work in Science can arise from a simple study of the soil and the plant, including an investigation of ways in which the scientist can help to solve problems connected with drainage, soil-sourness, manuring and weed and pest control.

Pupils should also be encouraged to cultivate a part of their home garden so that they may have the opportunity of putting into practice principles learned at school, thus gaining valuable experience and added confidence in their skill as gardeners.

In country schools full advantage should be taken of the exceptional opportunities for linking the work of the school with that of the rural community. Agriculture is an example of man's scientific use of the natural environment and it will therefore be appreciated that contact with the local pattern of farming through the continuous study of a chosen locality will help to give reality and definite purpose to the pupils' work.

Such a regional approach can be linked with the teaching of local history and geography, since it will be largely concerned with the district surrounding the school. Particular attention may be given to man's use of the soil and to typical occupations such as farming, milk production, quarrying, fishing, etc. Outdoor work should play a prominent part; visits to various places of interest and importance should be included and the pupils should strive to gain knowledge as a result of their own activity and first-hand experience. Classroom occupations should include the practical study and investigation of rocks, soil, plants, crops, birds and insects found in the district.

Studies of local industries, from a scientific viewpoint, may offer corresponding opportunities in urban schools. Teachers may obtain valuable guidance from the pamphlet *Exploration* issued by the Le Play Society.

Another line of development may be adopted by teachers who have had training and experience in teaching Elementary Science. Topics selected from the main branches of science may be studied in a practical and unacademic manner. The subject matter should arise from and be closely related to the pupil's experience; and the basis for each topic should be the posing of a specific problem, thus illustrating science as a method of investigation. Examples of suitable problems, selected from different branches of science are given below.

How does a bicycle pump work? (Introducing a simple study of atmospheric pressure.)

Why has a pen nib a slit in it? (Simple study of surface tension.)

How does a piano produce sounds? (Simple study of sound.)

Much of the work can be done practically, using very simple improvised apparatus, and a useful introduction may often be the taking to pieces and examination of items of common equipment such as old water taps, electric light bulbs, clocks, etc. Books are available which deal with the construction of simple apparatus and with suitable experimental work.

In the time available for Science only a selection from the many possible lines of development can be followed but with a little ingenuity the topics may be welded together by the teacher in such a way that a co-ordinated body of knowledge is built up from a series of unrelated studies. As far as possible the pupils' observations and simple experiments should provide the answers to the problems studied. It follows that the teacher will constantly take the line 'here is a problem to be investigated' not 'here is some information to be memorised'.

However, not all aspects of science are amenable to a simple investigation and one aim of the teacher will be to give the pupils some understanding of the place, both personal and social, of science in relation to their whole lives. This may be achieved by showing the ever-increasing dependence of the modern community on the work of scientists and the ways in which scientific discoveries such as those of Faraday, Pasteur and Marconi have affected the lives of men and women. In this connexion, the teacher will find valuable allies in the B.B.C.'s scientific broadcasts, in the newspapers, and in scientific films and film-strips.

SUGGESTED TOPICS

The sections starred should be included in the Science course taken by all boys and girls.

Science and the community

* Lives and discoveries of famous scientists.
Sources of power.
Making new materials – the work of the chemist.
* How Science aids the farmer, the doctor, the airman, the housewife, etc.

Nature Study and Biology (see also Health and Habits)

* Human biology – structure and working of the chief organs of the body.
* Air – composition; breathing; burning; ventilation.
* Water – sources; purification; water cycle; importance to living things.
* Simple treatment of micro-organisms – yeasts, moulds, bacteria.
* More detailed study of the plants and animals in the school environment.
The structure and working of the flowering plant.
Animal communities and plant associations.
Study of a habitat.

Garden Science

* Simple experimental treatment of the soil and the growing plant.
* Plant propagation and cultivation – annuals, biennials, perennials.
Lawn making and maintenance.
Trees and shrubs.
Building an apple tree.
Cereal plants.
Weeds and pests.

Science in Regional Study

Scientific study of the school neighbourhood – rocks, pebbles, minerals, soils; water supply and weather records; plant and animal survey; land utilisation, live stock, machinery.
Scientific study of a local industry – flax cultivation; production of linen fibre; spinning thread and weaving cloth; dyeing.

Practical Science

* Simple experimental study of machines to find out how they work – the bicycle pump, the compass, the piano, the primus stove, etc.
Making electricity – the flashlight battery, the cycle dynamo.

* Heating and lighting our homes – the science of coal, turf, wood, oil, electricity.

Simple experimental study of mirrors, lenses, prisms, colours.

Science of building materials – brick making; lime, cement, concrete; ores, metals; glass; timber.

Appendix VII

PHYSICAL EDUCATION

WHEN reorganisation is complete , the older children will be taught in secondary schools where facilities for Physical Education will include equipped gymnasia. In the meantime, the programme for those still in primary schools should be as wide as possible and, where facilities permit, may include Games, Dancing, Athletics and Swimming, in addition to Basic Physical Education.

During these years the approach of adolescence becomes increasingly manifest in both girls and boys, but earlier with girls than with boys. The increase in the rate of physical growth during this period produces in some children a temporary awkwardness and lack of muscular control, and it is therefore possible that there will be greater range of ability in any one class of seniors than in a class of younger children. Understanding and encouragement are needed to help the older children to develop, by experiment and perseverance, the added control now required to reach a good standard of performance. Each child should be encouraged to compete against his own best effort rather than against the best individual performance in the class.

Except in the case of Folk Dancing, boys and girls should, if possible, be taught separately at this stage, since a boy's approach to the work is now different from a girl's approach – his movements have speed and strength, hers have flow and style – and a different presentation is therefore desirable.

The following scheme is suggested for those who wish to have guidance:

Basic Physical Education

Synopsis 1A and 1B, numbers 17 – 24.

Synopsis 2A to 2H, numbers 17 – 24.

Variations and progressions where possible.

In smaller schools where several classes are taken in one division a selection of work from the above scheme or from the schemes on page 128 might be made.

Folk Dancing

A wide variety of Folk and Social Dances might be taught. Short dances which do not include complicated footwork or pattern are suggested, and the scheme should be planned in relation to the work

covered in junior classes. It is desirable that boys and girls should be taught together.

Games

Major games such as Netball, Basketball, Hockey and Football might now be introduced provided suitable courts or pitches are available. It is not essential, however, for children of this age to play in full-sized teams or on full-sized pitches. Where space is limited, games such as Quoit Tennis (P.P. page 68, No. 18) and Circular or Passing Rounders (P.P. page 68, No. 16) can be played.

Athletics

Training in running might lead up to 80 yards girls' and 100 yards boys' flat and relay racing. Some type of throwing should be included. Where space is limited this might be an aiming practice but, where possible, opportunity for full length throwing, using for example a cricket ball, should be given. For Long and High Jumping, proper take-offs and a pit filled with sand are required to ensure safe landing.

Swimming

As with younger children, the main aim with beginners is to give simple activities in shallow water which help them to become confident and to get the 'feel' of the water. It must be borne in mind that non-swimmers become cold more quickly than swimmers. Although too much time is sometimes spent in 'land-drill', it is necessary to teach the rudiments of the well-known strokes on dry land so that the children will know what to practise when in the water. Where Swimming is taken in a river, lough or the sea, extra safety precautions are necessary; two adults should be available, one of whom should be able to life-save, and the number in each group should be kept small in order to make complete supervision possible.

Appendix VIII

HEALTH AND HABITS

In the prefatory chapter, 'The New Programme', attention is drawn to the importance of health education and to the part it will play in the curriculum of the unreorganised primary school. This section of the prefatory chapter should be read in conjunction with what follows.

In the following scheme which has been drawn up for the guidance of teachers, the subject of 'Health and Habits' in the senior classes of the unreorganised primary school is dealt with under a number of main headings – Personal Hygiene, Hygiene in the Home, etc. With these older children the subject should continue to be treated in a practical manner but some systematisation of the work becomes possible. The lines on which it may now be dealt with are indicated.

The scientific principles underlying the various sections may be treated as part of the Science course. Some aspects of health education, on the other hand, will more fittingly be treated during a Domestic Science or Physical Education period or in the History lesson.

In a subject such as this, which is the concern of all teachers, careful co-ordination will be found necessary if no major topic is to be omitted and if duplication is to be avoided.

SUGGESTED SCHEME

Personal Hygiene

Skin – heat control by sweating, getting rid of waste.
Washing and Bathing.
Care of hair, skin, eyes and ears.
Breathing.
Care of nose.
Food canal, digestion.
Teeth hygiene, constipation.
Skeleton and muscles.
Posture and exercise.

Temperance

Social and personal dangers of over-indulgence in alcoholic drink.

Hygiene in the Home

Changing and washing of clothes.
Dirty hands – cleanliness in food preparation.
Ventilation; droplet infection.
Food and drink.
Balanced diet; Milk and Meals.
Insect pests – fly, flea, etc.
Contamination of food by disease carriers.
Micro-organisms and water.
Purification of water

First Aid

Treatment of cuts, scalds, burns.
Fainting. Artificial respiration.
Treatment of bruises, sprains, strains, broken bones.
Use of antiseptics, gargling.

Public Health

Part played by the School Medical Service and the School Dental Service.

Appendix IX

MUSIC

In the senior classes of the unreorganised primary school the aim should be to consolidate and amplify the work already outlined. In the extra years available, some attention might be devoted to the following:

(*a*) The attainment of a higher degree of fluency in sight reading.

The pupils should now be introduced to the more complex rhythms. In the programme for the junior classes no mention has been made of the names of the notes on the lines and in the spaces. These may now be taught together with the names of the Key Signatures. The children may be shown the construction of the Major diatonic scale and how the sharp and flat keys are built up, starting with the key of C major and going on to G major and F major and then to the remaining major keys in order. Fluency in sight reading depends to a large extent on ability to recognise an interval; the intervals therefore should be taught and may be confined to the perfect major and minor. The more commonly employed musical terms can be learned in song singing and listening.

(*b*) The achievement of a better standard of performance in song singing and enlargement of the repertoire to include a greater number of classical, contemporary and folk songs, particularly Irish folk songs.

(*c*) Further training in the art of listening.

It is felt that as the child grows older this work should assume greater importance, particularly so in these days, since the radio in most homes tends to be a permanent background to the daily activities of the home and children need to be taught how to make wise use of this form of entertainment.

(*d*) Informal talks on a wide variety of musical topics.

(*e*) Making the work more creative.

This may be achieved by getting the children to do their own orchestrations for the percussion band and by encouraging them to set simple nursery and other rhymes to music. A start can be made by asking one child to sing his own tune for the first line of the rhyme, the teacher writing it on the blackboard. A second child then supplies an 'answer' by singing his tune for the second line

of the rhyme and so on till the tune is complete. Children are capable of much originality and real musical feeling if encouraged in this way.

(*f*) Securing a higher degree of correlation with other subjects.

Each subject of the school curriculum should be regarded not as an isolated unit in knowledge, but rather as a contribution to the whole. Music, which touches life on all sides, has a vital contribution to make when considered in this light. In correlating music with other subjects, teachers should use every opportunity to enrich the whole field of their work.

Appendix X

HISTORY

THE teaching of the senior pupils in unreorganised schools cannot be considered apart from that of the younger pupils, and teachers should make themselves acquainted with the chapter on History in the primary school, particularly the section dealing with Primary 5 – 7 in unreorganised schools.

CONTENT OF THE SYLLABUS

At this stage it is to a special degree necessary that the content and difficulty of the syllabus should be related to the ability of the actual pupils to be taught, for owing to differences in taste and intelligence it is impossible to say what topics are suitable for, say, all children aged twelve. Each group of children must be catered for separately.

Whilst this is so, however, we can with most pupils count on a considerable increase of general ability, as they pass through these classes, and this, together with their widening experience and increasing knowledge, must affect the work we plan for them. The chronological element in the teaching may therefore become more prominent; and, at a later date, the causal relationships of history may be stressed more. The children become able to appreciate linked sequences of events and, because of improvement in the scope and duration of their attention, are fitted to deal with more complicated topics and to concentrate on them for longer periods at a stretch.

Furthermore, it ought to be remembered that at this stage most of our pupils, however they may differ in intelligence and interests, are becoming more and more conscious of the adult world. Our teaching must play its part in elucidating that world to the extent that the pupils are capable of understanding it. As the contemporary world cannot be explained satisfactorily in terms of the history of any one country, it is important that teachers, especially when dealing with the latest periods and the older pupils, should frequently include topics of world significance in their syllabuses.

Though the syllabuses finally adopted may differ widely from school to school, most of them will be arranged according to one or another of three plans, or to some combination of them. These three plans are now considered one by one.

(*a*) *Syllabus arranged on traditional lines*

The traditional arrangement of the syllabus calls for the appor-

tionment of the whole chronological range to be covered amongst the various classes in such a way that the most recent period is studied in the pupils' last year at school. It is familiar to all teachers and requires no amplification here.

It was suggested that, where it is proposed to adopt this arrangement, the syllabus for Primary 6 should end at about 1500 A.D. leaving the remaining 450 years to be divided amongst the other classes. Below are suggested two schemes for doing so. The terminal dates of the periods are for the most part those of importance in British history, but, as stated above, teachers should frequently include topics dealing with a wider field such as, for example, the two world wars and their consequences, and recent changes in the Empire-Commonwealth. Scheme B should be useful when the school leaving age is raised.

Scheme A – a three-year course.

Primary 7	1485 – 1688.
Primary 8	1688 – 1815.
Primary 9	From 1815 to the present day.

Scheme B – a four-year course.

Primary 7	1485 – 1660.
Primary 8	1660 – 1789.
Primary 9	1789 – 1900.
Primary 10	From 1900 to the present day.

Suitable topics may be found in the list at the end of the chapter on primary school History.

The period suggested for the last year of the four-year course has been deliberately made short to enable teachers to do a great deal of revision. Many of the topics coming into prominence after 1900 have their roots outside the period, and it is expected that teachers will treat them in their proper context and perspective.

(*b*) *Syllabus arranged by 'lines of development'*

In this plan each year's work is not a period of the traditional type but a number of 'lines of development'. By these are meant topics, such as, for example, the history of agriculture or the spread of Christianity, which can be given separate treatment over a long chronological stretch. By so arranging the syllabus it is claimed that the pupils see more clearly the purpose of the individual lessons, and that, by a suitable selection of themes, the difficulty of the work can be adjusted to the ability of the pupil more accurately than under the old system. By a judicious choice of topics and by constant reference back to 'lines' already dealt with, it is asserted that as complete a picture of the modern world and its antecedents can be built up as under any other system.

It is suggested that if this type of work is attempted it should be confined to Primary 8 and 9 and ultimately to Primary 10 when the school leaving age becomes fifteen.

The choice and arrangement of the themes to be studied are matters for each school to decide. The following topics are, however, worth consideration:

How man has explored the world he lives in.

The history of agriculture.

The history of transport and communication.

Homes through the ages.

The history of Christianity.

Room might also be found in the syllabus for topics such as 'An outline of modern Irish history' and, perhaps in the pupils' last year at school, 'A brief survey of the twentieth century'.

Two or three topics, according to their size and importance, should be assigned to each year.

(c) Syllabuses arranged by 'patches'

A still further manner of planning the syllabus has been devised by those who remain dissatisfied with the methods already mentioned. The 'patches' or units of study in this case are difficult to define precisely and may take a variety of forms. Their nature may perhaps best be seen by examples. They may vary from a wide survey of an entire society at a particular period of time, e.g., Ireland at the time of the Norman invasion, to topics such as town life in medieval times and the navy in the time of Nelson, narrower in scope but still covering a wider field and a shorter chronological range than the 'line of development'. The peculiar value of this arrangement is, according to its advocates, that by the study of such 'patches' in some detail a more accurate idea of what people actually thought, felt and did in past ages can be obtained than by any other way. Nor is this done at the expense of the idea of development if the 'patches' are selected to illustrate critical periods in the world's history.

Two or perhaps three 'patches' should serve as a year's work and teachers must make their own selection. Some have been mentioned above: others might well be chosen from the thirteenth century, the time of Elizabeth I, the mid-seventeenth century, the period of the Industrial Revolution, the twentieth century.

Much could be said for and against each of the methods of syllabus construction here outlined. No exclusive virtue is claimed for any one of them; and all could serve as the basis for useful educational work. It is for each teacher to decide on the plan he prefers and to put it into use as best befits his circumstances.

CLASSROOM PROCEDURE

Many of the teaching methods advocated at the primary school stage are suitable for older children also. Teachers should, therefore, familiarise themselves with what was said on this subject in the earlier chapter on the teaching of History.

The role of the teacher gradually alters, and increasingly becomes one of exciting interest by problem and paradox, of revealing opportunities for interesting activities based on the work in hand, and of indicating where the pupils may obtain the information and materials necessary to carry out their plans.

The oral lesson remains prominent but is no longer occupied predominantly by the teacher's exposition. Instead, it should be to an increasing extent taken up by discussion, revision and summarising of what pupils have already read, or by reports on group or individual work carried out by members of the class.

The pupils' part in the work is of great importance and must be planned with flexibility and care to ensure that each secures a task suitable to his intelligence and aptitudes. There is much to be said for allowing pupils individually or in small groups to pursue occupations suited to their tastes and talents and to bring the results of their labours to the notice of the rest of the class orally, in writing, or by displaying the final product. The wide differences often found among children in the same class make this stage a very suitable one for co-operative activity, whether in the form of compiling a simple record of work done or of a more elaborate 'project' to the completion of which each contributes according to his ability. The keeping of individual note books by the pupils is recommended, and in them, as time goes on, original work in the shape of maps, time-charts, essays and the like should replace such items as diagrams and summaries constructed by the class and transcribed from the blackboard.

Appendix XI

IRISH

In the senior classes of unreorganised primary schools, the teaching should be directed towards encouraging increasing fluency of speech, enlargement of vocabulary and command of idiom.

Lessons in formal grammar are to be avoided, and the teaching should emphasise the need for correct grammatical usage, which can be acquired as in the earlier stages by frequent remodelling and repetition of typical phrases and constructions. General conversation, of the type indicated for the more junior classes, should continue to be the main basis of the oral lessons. The vocabulary should not be overloaded, and the topics of conversation should be suited to the children's ages, experiences and environment. Class debates, discussions and dramatic work should be continued as a means of arousing and maintaining interest.

It will now be possible to develop written work to include simple direct narration, and the exercises indicated for the lower standards can be broadened in scope and in range.

In many schools the listing and explanation of proper names and of place names will be found to add interest and meaning to the history and geography lessons.

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