



The National Curriculum

Handbook for primary teachers in England www.nc.uk.net

Key stages 1 and 2



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Foreword

The National Curriculum lies at the heart of our policies to raise standards. It sets out a clear, full and statutory entitlement to learning for all pupils. It determines the content of what will be taught, and sets attainment targets for learning. It also determines how performance will be assessed and reported. An effective National Curriculum therefore gives teachers, pupils, parents, employers and their wider community a clear and shared understanding of the skills and knowledge that young people will gain at school. It allows schools to meet the individual learning needs of pupils and to develop a distinctive character and ethos rooted in their local communities. And it provides a framework within which all partners in education can support young people on the road to further learning.

Getting the National Curriculum right presents difficult choices and balances. It must be robust enough to define and defend the core of knowledge and cultural experience which is the entitlement of every pupil, and at the same time flexible enough to give teachers the scope to build their teaching around it in ways which will enhance its delivery to their pupils.

The focus of this National Curriculum, together with the wider school curriculum, is therefore to ensure that pupils develop from an early age the essential literacy and numeracy skills they need to learn; to provide them with a guaranteed, full and rounded entitlement to learning; to foster their creativity; and to give teachers discretion to find the best ways to inspire in their pupils a joy and commitment to learning that will last a lifetime.

An entitlement to learning must be an entitlement for all pupils. This National Curriculum includes for the first time a detailed, overarching statement on inclusion which makes clear the principles schools must follow in their teaching right across the curriculum, to ensure that all pupils have the chance to succeed, whatever their individual needs and the potential barriers to their learning may be.

Equality of opportunity is one of a broad set of common values and purposes which underpin the school curriculum and the work of schools. These also include a commitment to valuing ourselves, our families and other relationships, the wider groups to which we belong, the diversity in our society and the environment in which we live. Until now, ours was one of the few national curricula not to have a statement of rationale setting out the fundamental principles underlying the curriculum. The handbooks for primary and secondary teachers include for the first time such a statement.

This is also the first National Curriculum in England to include citizenship, from September 2002, as part of the statutory curriculum for secondary schools. Education in citizenship and democracy will provide coherence in the way in which all pupils are helped to develop a full understanding of their roles and responsibilities as citizens in a modern democracy. It will play an important role, alongside other aspects of the curriculum and school life, in helping pupils to deal with difficult moral and social questions that arise in their lives and in society. The handbooks also provide for the first time a national framework for the teaching of personal, social and health education. Both elements reflect the fact that education is also about helping pupils to develop the knowledge, skills and understanding they need to live confident, healthy, independent lives, as individuals, parents, workers and members of society.



Rt Hon David Blunkett
Secretary of State for Education
and Employment



Sir William Stubbs
Chairman, Qualifications
and Curriculum Authority

About this handbook

This handbook:

- sets out the legal requirements of the National Curriculum in England for pupils aged five to 11
- provides information to help teachers implement the National Curriculum in their schools.

It has been written for primary teachers. Parents, governors and all those with an interest in education will also find it useful.

The National Curriculum for pupils aged 11 to 16 is set out in the handbook for secondary teachers. There are also separate booklets for the 12 National Curriculum subjects.

All these publications and related materials can be found on the National Curriculum web site at www.nc.uk.net.

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The school curriculum and the National Curriculum: values, aims and purposes



The school curriculum and the National Curriculum: values, aims and purposes

The school curriculum comprises all learning and other experiences that each school plans for its pupils. The National Curriculum is an important element of the school curriculum.

Values and purposes underpinning the school curriculum

Education influences and reflects the values of society, and the kind of society we want to be. It is important, therefore, to recognise a broad set of common values and purposes that underpin the school curriculum and the work of schools.¹

Foremost is a belief in education, at home and at school, as a route to the spiritual, moral, social, cultural, physical and mental development, and thus the well-being, of the individual. Education is also a route to equality of opportunity for all, a healthy and just democracy, a productive economy, and sustainable development. Education should reflect the enduring values that contribute to these ends. These include valuing ourselves, our families and other relationships, the wider groups to which we belong, the diversity in our society and the environment in which we live. Education should also reaffirm our commitment to the virtues of truth, justice, honesty, trust and a sense of duty.

At the same time, education must enable us to respond positively to the opportunities and challenges of the rapidly changing world in which we live and work. In particular, we need to be prepared to engage as individuals, parents, workers and citizens with economic, social and cultural change, including the continued globalisation of the economy and society, with new work and leisure patterns and with the rapid expansion of communication technologies.

Aims for the school curriculum

If schools are to respond effectively to these values and purposes, they need to work in collaboration with families and the local community, including church and voluntary groups, local agencies and business, in seeking to achieve two broad aims through the curriculum. These aims provide an essential context within which schools develop their own curriculum.

¹ In planning their curriculum, schools may wish to take account of the statement of values finalised after widespread consultation by the National Forum for Values in Education and the Community (May 1997). These are reproduced on pages 147–149 of this handbook.



Aim 1: The school curriculum should aim to provide opportunities for all pupils to learn and to achieve.

The school curriculum should develop enjoyment of, and commitment to, learning as a means of encouraging and stimulating the best possible progress and the highest attainment for all pupils. It should build on pupils' strengths, interests and experiences and develop their confidence in their capacity to learn and work independently and collaboratively. It should equip them with the essential learning skills of literacy, numeracy, and information and communication technology, and promote an enquiring mind and capacity to think rationally.

The school curriculum should contribute to the development of pupils' sense of identity through knowledge and understanding of the spiritual, moral, social and cultural heritages of Britain's diverse society and of the local, national, European, Commonwealth and global dimensions of their lives. It should encourage pupils to appreciate human aspirations and achievements in aesthetic, scientific, technological and social fields, and prompt a personal response to a range of experiences and ideas.

By providing rich and varied contexts for pupils to acquire, develop and apply a broad range of knowledge, understanding and skills, the curriculum should enable pupils to think creatively and critically, to solve problems and to make a difference for the better. It should give them the opportunity to become creative, innovative, enterprising and capable of leadership to equip them for their future lives as workers and citizens. It should also develop their physical skills and encourage them to recognise the importance of pursuing a healthy lifestyle and keeping themselves and others safe.

Aim 2: The school curriculum should aim to promote pupils' spiritual, moral, social and cultural development and prepare all pupils for the opportunities, responsibilities and experiences of life.

The school curriculum should promote pupils' spiritual, moral, social and cultural development and, in particular, develop principles for distinguishing between right and wrong. It should develop their knowledge, understanding and appreciation of their own and different beliefs and cultures, and how these influence individuals and societies. The school curriculum should pass on enduring values, develop pupils' integrity and autonomy and help them to be responsible and caring citizens capable of contributing to the development of a just society. It should promote equal opportunities and enable pupils to challenge discrimination and stereotyping. It should develop their awareness and understanding of, and respect for, the environments in which they live, and secure their commitment to sustainable development at a personal, local, national and global level. It should also equip pupils as consumers to make informed judgements and independent decisions and to understand their responsibilities and rights.

The school curriculum should promote pupils' self-esteem and emotional well-being and help them to form and maintain worthwhile and satisfying relationships, based on respect for themselves and for others, at home, school, work and in the community. It should develop their ability to relate to others and work for the common good.



It should enable pupils to respond positively to opportunities, challenges and responsibilities, to manage risk and to cope with change and adversity. It should prepare pupils for the next steps in their education, training and employment and equip them to make informed choices at school and throughout their lives, enabling them to appreciate the relevance of their achievements to life and society outside school, including leisure, community engagement and employment.

The interdependence of the two aims

These two aims reinforce each other. The personal development of pupils, spiritually, morally, socially and culturally, plays a significant part in their ability to learn and to achieve. Development in both areas is essential to raising standards of attainment for all pupils.

The national framework and the purposes of the National Curriculum

The two broad aims for the school curriculum are reflected in section 351 of the Education Act 1996, which requires that all maintained schools provide a balanced and broadly based curriculum that:

- promotes the spiritual, moral, cultural, mental and physical development of pupils at the school and of society
- prepares pupils at the school for the opportunities, responsibilities and experiences of adult life.

The Act requires the Secretary of State, local authorities and the governing body and headteacher to take steps to achieve these requirements. The Secretary of State meets his responsibilities in this area by providing a national framework which incorporates the National Curriculum, religious education and other statutory requirements. This framework is designed to enable all schools to respond effectively to national and local priorities, to meet the individual learning needs of all pupils and to develop a distinctive character and ethos rooted in their local communities.

The four main purposes of the National Curriculum

To establish an entitlement

The National Curriculum secures for all pupils, irrespective of social background, culture, race, gender, differences in ability and disabilities, an entitlement to a number of areas of learning and to develop knowledge, understanding, skills and attitudes necessary for their self-fulfilment and development as active and responsible citizens.

To establish standards

The National Curriculum makes expectations for learning and attainment explicit to pupils, parents, teachers, governors, employers and the public, and establishes national standards for the performance of all pupils in the subjects it includes. These standards can be used to set targets for improvement, measure progress towards those targets, and monitor and compare performance between individuals, groups and schools.



To promote continuity and coherence

The National Curriculum contributes to a coherent national framework that promotes curriculum continuity and is sufficiently flexible to ensure progression in pupils' learning. It facilitates the transition of pupils between schools and phases of education and provides a foundation for lifelong learning.

To promote public understanding

The National Curriculum increases public understanding of, and confidence in, the work of schools and in the learning and achievements resulting from compulsory education. It provides a common basis for discussion of educational issues among lay and professional groups, including pupils, parents, teachers, governors and employers.

Developing the school curriculum

While these four purposes do not change over time, the curriculum itself cannot remain static. It must be responsive to changes in society and the economy, and changes in the nature of schooling itself. Teachers, individually and collectively, have to reappraise their teaching in response to the changing needs of their pupils and the impact of economic, social and cultural change. Education only flourishes if it successfully adapts to the demands and needs of the time.



The school curriculum and the National Curriculum: about key stages 1 and 2



The school curriculum and the National Curriculum: about key stages 1 and 2

Where and when the National Curriculum applies

The National Curriculum applies to pupils of compulsory school age in community and foundation schools, including community special schools and foundation special schools, and voluntary aided and voluntary controlled schools. It is organised on the basis of four key stages¹, as shown here.

	Key stage 1	Key stage 2	Key stage 3	Key stage 4	
Age	5–7	7–11	11–14	14–16	
Year groups	1–2	3–6	7–9	10–11	
English	■	■	■	■	National Curriculum core subjects
Mathematics	■	■	■	●	
Science	■	■	■	●	
Design and technology	■	■	■	●	National Curriculum non-core foundation subjects
Information and communication technology	■	■	■	■	
History	■	■	■		
Geography	■	■	■		
Modern foreign languages			■	●	
Art and design	■	■	■		
Music	■	■	■		
Physical education	■	■	■	●	
Citizenship			▶	▶	

■ Statutory from August 2000
 ● Statutory from August 2001
 ▶ Statutory from August 2002

Note about physical education

The Government believes that two hours of physical activity a week, including the National Curriculum for physical education and extra-curricular activities, should be an aspiration for all schools. This applies throughout all key stages.

¹ The four key stages are defined precisely in section 355(1) a–d of the Education Act 1996.

The structure of the National Curriculum

For each subject and for each key stage, programmes of study set out what pupils should be taught, and attainment targets set out the expected standards of pupils' performance. It is for schools to choose how they organise their school curriculum to include the programmes of study.

Programmes of study

The programmes of study² set out what pupils should be taught in each subject at each key stage, and provide the basis for planning schemes of work. When planning, schools should also consider the four general teaching requirements (pages 30–40) that apply across the programmes of study.

The national frameworks for teaching literacy and mathematics published by the DfEE, and the exemplar schemes of work jointly published by the DfEE and QCA, show how the programmes of study and the attainment targets can be translated into practical, manageable teaching plans.

Attainment targets and level descriptions

An attainment target sets out the 'knowledge, skills and understanding which pupils of different abilities and maturities are expected to have by the end of each key stage'³. Except in the case of citizenship⁴, attainment targets consist of eight level descriptions of increasing difficulty, plus a description for exceptional performance above level 8. Each level description describes the types and range of performance that pupils working at that level should characteristically demonstrate.

The level descriptions provide the basis for making judgements about pupils' performance at the end of key stages 1, 2 and 3. At key stage 4, national qualifications are the main means of assessing attainment in National Curriculum subjects.

Range of levels within which the great majority of pupils are expected to work		Expected attainment for the majority of pupils at the end of the key stage	
Key stage 1	1–3	at age 7	2
Key stage 2	2–5	at age 11	4
Key stage 3	3–7	at age 14	5/6⁵

Using level descriptions

Assessing attainment at the end of a key stage

In deciding on a pupil's level of attainment at the end of a key stage, teachers should judge which description best fits the pupil's performance. When doing so, each description should be considered alongside descriptions for adjacent levels.

Arrangements for statutory assessment at the end of each key stage are set out in detail in QCA's annual booklets about assessment and reporting arrangements. The level descriptions are not designed to assess individual pieces of work. They list

² The Education Act 1996, section 353b, defines a programme of study as the 'matters, skills and processes' that should be taught to pupils of different abilities and maturities during the key stage.

³ As defined by the Education Act 1996, section 353a.

⁴ In citizenship, expected performance for the majority of pupils at the end of key stages 3 and 4 is set out in end of key stage descriptions.

⁵ Including modern foreign languages.



aspects of attainment, based on the programmes of study, which teachers need to assess to build up a picture of a pupil's performance over time in a range of contexts.

Planning

Teachers' planning for schemes of work should start from the programmes of study and the needs and abilities of their pupils. Level descriptions can help to determine the degree of challenge and progression for work across each year of a key stage.

Reporting

Teachers are required to report annually to parents on pupils' progress. Although not designed to be used at the end of each year across the key stage, the level descriptions can be used as a basis to describe pupils' progress.

Target setting

The Government has established national targets for the proportion of 11-year-olds achieving level 4 in English and mathematics National Curriculum tests at the end of key stage 2. Schools are required to set targets for the proportions of their pupils reaching these targets. Optional tests in English and mathematics are available to assist schools in monitoring pupils' progress towards these targets.

For some aspects of statutory assessment in English and mathematics at the end of key stage 1, level 2 has been subdivided into 2a, 2b, 2c so that it is possible to differentiate between the attainment of different groups of pupils who achieve level 2.

To support target setting for pupils who achieve significantly below age-related expectations, performance criteria have been developed in English and mathematics leading to level 1 and within levels 1 and 2. In addition, performance criteria have been developed for pupils' personal and social development. These criteria were published in *Supporting the target setting process* (DfEE/QCA, 1998).



Other requirements

Religious education

Under the Education Act 1996 schools must provide religious education for all registered pupils, although parents can choose to withdraw their children. Schools, other than voluntary aided schools and those of a religious character, must teach religious education according to the locally agreed syllabus. Each agreed syllabus should reflect the fact that the religious traditions in Great Britain are in the main Christian, while taking account of the teachings and practices of the other principal religions represented in Great Britain.

Religious education makes a distinctive contribution to the school curriculum by developing pupils' knowledge and understanding of religion, religious beliefs, practices, language and traditions and their influence on individuals, communities, societies and cultures. It enables pupils to consider and respond to a range of important questions related to their own spiritual development, the development of values and attitudes and fundamental questions concerning the meaning and purpose of life.

Sex education

Primary schools must provide and keep up to date a written statement of their policy on sex education and make it available to parents and pupils. Parents can choose to withdraw their children from all or part of sex education, where it is provided.

Learning across the National Curriculum⁶

Promoting spiritual, moral, social and cultural development across the National Curriculum

All National Curriculum subjects provide opportunities to promote pupils' spiritual, moral, social and cultural development. Explicit opportunities to promote pupils' development in these areas are provided in religious education and the non-statutory framework for personal, social and health education (PSHE) and citizenship⁷ at key stages 1 and 2. A significant contribution is also made by school ethos, effective relationships throughout the school, collective worship, and other curriculum activities.

- Pupils' *spiritual development* involves the growth of their sense of self, their unique potential, their understanding of their strengths and weaknesses, and their will to achieve. As their curiosity about themselves and their place in the world increases, they try to answer for themselves some of life's fundamental questions. They develop the knowledge, skills, understanding, qualities and attitudes they need to foster their own inner lives and non-material well-being.
- Pupils' *moral development* involves pupils acquiring an understanding of the difference between right and wrong and of moral conflict, a concern for others and the will to do what is right. They are able and willing to reflect on the consequences of their actions and learn how to forgive themselves and others. They develop the knowledge, skills, understanding, qualities and attitudes they need in order to make responsible moral decisions and to act on them.

⁶ Additional information on opportunities to promote learning across the National Curriculum is included in the subject booklets.

⁷ Guidelines for the non-statutory framework are included on pages 136–141 of this handbook.



- Pupils' *social development* involves pupils acquiring an understanding of the responsibilities and rights of being members of families and communities (local, national and global), and an ability to relate to others and to work with others for the common good. They display a sense of belonging and an increasing willingness to participate. They develop the knowledge, skills, understanding, qualities and attitudes they need to make an active contribution to the democratic process in each of their communities.
- Pupils' *cultural development* involves pupils acquiring an understanding of cultural traditions and an ability to appreciate and respond to a variety of aesthetic experiences. They acquire a respect for their own culture and that of others, an interest in others' ways of doing things and curiosity about differences. They develop the knowledge, skills, understanding, qualities and attitudes they need to understand, appreciate and contribute to culture.

Promoting personal, social and health education and citizenship

Guidelines are provided in this handbook to help schools establish coherence and consistency, and to promote curriculum continuity and progression in pupils' learning in PSHE and citizenship.

Promoting skills across the National Curriculum

At all key stages, pupils learn, practise, combine, develop and refine a wide range of skills in their work across the National Curriculum. Some of these skills are subject specific (painting in art and design), some are common to several subjects (enquiry skills in science, history and geography).

Some skills are universal, for example the skills of communication, improving own learning and performance, and creative thinking. These skills are also embedded in the subjects of the National Curriculum and are essential to effective learning.

Opportunities for teaching and learning all these skills across the key stages can be identified when planning. Pupils can be encouraged to reflect on what and on how they learn, and how these skills can be applied to different subjects, different problems and real-life situations.

Key skills

Six skill areas are described as key skills because they help learners to improve their learning and performance in education, work and life. These key skills are embedded in the National Curriculum.

Communication

The key skill of communication includes skills in speaking, listening, reading and writing. Skills in speaking and listening include the ability to speak effectively for different audiences; to listen, understand and respond appropriately to others; and to participate effectively in group discussion. Skills in reading and writing include the ability to read fluently a range of literary and non-fiction texts and to reflect critically on what is read; and the ability to write fluently for a range of purposes and audiences, including critical analysis of their own and others' writing. Opportunities for developing this key skill are provided through English in particular and through pupils' use of language across the curriculum.



Application of number

The key skill of application of number includes developing a range of mental calculation skills and the ability to apply them within a variety of contexts. Skills include developing the understanding and use of mathematical language related to numbers and calculations in order to process data, solve increasingly complex problems and explain the reasoning used. Pupils need to be able to apply calculation skills and the understanding of number to problems in other National Curriculum subjects and to real-life situations. Opportunities for developing this key skill are provided explicitly in mathematics.

Information technology

The key skill of information technology includes the ability to use a range of information sources and ICT tools to find, analyse, interpret, evaluate and present information for a range of purposes. Skills include the ability to make critical and informed judgements about when and how to use ICT for maximum benefit in accessing information, in solving problems or for expressive work. The ability to use ICT information sources includes enquiry and decision-making skills, as well as information-processing and creative thinking skills and the ability to review, modify and evaluate work with ICT. Opportunities for developing this key skill are provided explicitly through the subject of ICT and through pupils' use of ICT across the curriculum.

Working with others

The key skill of working with others includes the ability to contribute to small-group and whole-class discussion, and to work with others to meet a challenge. If pupils are to work with others they must develop social skills and a growing awareness and understanding of others' needs. All subjects provide opportunities for pupils to cooperate and work effectively with others in formal and informal settings, to appreciate the experience of others and consider different perspectives, and to benefit from what others think, say and do.

Improving own learning and performance

The key skill of improving own learning and performance involves pupils reflecting on and critically evaluating their work and what they have learnt, and identifying ways to improve their learning and performance. They need to be able to identify the purposes of learning, to reflect on the processes of learning, to assess progress in learning, to identify obstacles or problems in learning and to plan ways to improve learning. All subjects provide opportunities for pupils to review their work and discuss ways to improve their learning.

Problem solving

The key skill of problem solving involves pupils developing the skills and strategies that will help them to solve the problems they face in learning and in life. Problem solving includes the skills of identifying and understanding a problem, planning ways to solve a problem, monitoring progress in tackling a problem and reviewing solutions to problems. All subjects provide pupils with opportunities to respond to the challenge of problems and to plan, test, modify and review the progress needed to achieve particular outcomes.



Thinking skills

By using thinking skills pupils can focus on ‘knowing how’ as well as ‘knowing what’ – learning how to learn. The following thinking skills complement the key skills and are embedded in the National Curriculum.

Information-processing skills

These enable pupils to locate and collect relevant information, to sort, classify, sequence, compare and contrast, and to analyse part/whole relationships.

Reasoning skills

These enable pupils to give reasons for opinions and actions, to draw inferences and make deductions, to use precise language to explain what they think, and to make judgements and decisions informed by reasons or evidence.

Enquiry skills

These enable pupils to ask relevant questions, to pose and define problems, to plan what to do and how to research, to predict outcomes and anticipate consequences, and to test conclusions and improve ideas.

Creative thinking skills

These enable pupils to generate and extend ideas, to suggest hypotheses, to apply imagination, and to look for alternative innovative outcomes.

Evaluation skills

These enable pupils to evaluate information, to judge the value of what they read, hear and do, to develop criteria for judging the value of their own and others’ work or ideas, and to have confidence in their judgements.

Promoting other aspects of the school curriculum

Financial capability

Financial capability is about making sensible choices in relation to managing money. It helps pupils make independent and informed decisions about keeping money safe, budgeting, spending, saving, sharing, borrowing and obtaining value for money. It helps pupils to develop a sense of responsibility, to understand their own and others’ needs and to consider the effects of their decisions on themselves, and on families, communities and the wider world.

There are opportunities for pupils to develop financial capability within the school curriculum, in particular in their work in mathematics, PSHE and citizenship, as well as through involvement in other school activities such as work with the community and enterprise projects.

Enterprise education

Enterprise education enables pupils to develop confidence, self-reliance and willingness to embrace change. Through participation in mini-enterprises pupils can practise risk management, learning from mistakes and being innovative.



Education for sustainable development

Education for sustainable development enables pupils to develop the knowledge, skills, understanding and values to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future. There are opportunities for pupils to develop their understanding of sustainable development within the school curriculum, in particular in their work in geography, science, PSHE and citizenship.

Building on the early learning goals

From September 2000, the term ‘foundation stage’ will be used to describe the phase of education from a child’s third birthday to the end of the reception year. The early learning goals set out what most children are expected to achieve by the end of the foundation stage. They are organised as six areas of learning: *personal, social and emotional development; language and literacy; mathematical development; knowledge and understanding of the world; physical development; and creative development*. The early learning goals are broadly equivalent to level 1 of the National Curriculum.

By the end of the foundation stage most children will have had at least two terms of full-time education in a reception class, in addition to their nursery and/or pre-school experience. Just as some children will still be progressing towards the early learning goals at the end of the foundation stage, some children will achieve and progress beyond them during this stage. The achievement of children beyond the early learning goals can be described using the level descriptions of the National Curriculum.

Working with the National Literacy and Numeracy Strategies

The Government has put in place two strategies designed to raise standards in all primary schools in England. Frameworks for teaching literacy and mathematics have been published to support these strategies. These frameworks offer detailed objectives for planning and teaching the sections of the English programmes of study for **reading** and **writing** and all sections of the programmes of study for mathematics for pupils aged five to 11.

In teaching the literacy framework some aspects of **speaking and listening** are also covered. As well as implementing fully the literacy *Framework for teaching*, schools must take care to cover the whole of the **speaking and listening** section of the English programmes of study for key stages 1 and 2. By implementing fully the *Framework for teaching mathematics*, schools will fulfil their statutory duty in relation to the National Curriculum subject of mathematics for key stages 1 and 2.



The National Curriculum programmes of study



A common structure and design for all subjects

The programmes of study

The National Curriculum programmes of study have been given a common structure and a common design.

In each subject, at each key stage, the main column **1** contains the programme of study, which sets out two sorts of requirements:

- **Knowledge, skills and understanding 2** – what has to be taught in the subject during the key stage
- **Breadth of study 3** – the contexts, activities, areas of study and range of experiences through which the **Knowledge, skills and understanding** should be taught.

Schools are not required by law to teach the content in grey type. This includes the examples in the main column **4** [printed inside square brackets], all text in the margins **5** and information and examples in the inclusion statement. In the programmes of study *italic type* is used to emphasise options, where schools and teachers can choose between requirements.

The programmes of study for English, mathematics and science

The programmes of study for English and science contain sections that correspond directly to the attainment targets for each subject. In mathematics this one-to-one correspondence does not hold for all key stages – see the mathematics programme of study for more information. In English, the three sections of the programme of study each contain **Breadth of study** requirements. In mathematics and science there is a single, separate set of **Breadth of study** requirements for each key stage.

The programmes of study in the non-core foundation subjects

In these subjects (except for citizenship) the programme of study simply contains two sets of requirements – **Knowledge, skills and understanding** and **Breadth of study**. The programmes of study for citizenship contain no **Breadth of study** requirements.

Information in the margins

At the start of each key stage, the margin begins with a summary **6** of the main things that pupils will learn during the key stage. The margins also contain four other types of non-statutory information:

- notes giving key information that should be taken into account when teaching the subject
- notes giving definitions of words and phrases in the programmes of study
- suggested opportunities for pupils to use information and communication technology (ICT) as they learn the subject
- some key links with other subjects indicating connections between teaching requirements, and suggesting how a requirement in one subject can build on the requirements in another in the same key stage.



The referencing system

References work as follows:

A reference in reads and means ...
Physical education key stage 2	11a, 11b → links to other subjects These requirements build on Gg/2c.	Physical education key stage 2, requirements 11a and 11b build on geography (key stage 2), paragraph 2, requirement c.
Art and design key stage 1	4a → links to other subjects This requirement builds on Ma3/2a, 2c, 2d.	Art and design key stage 1, requirement 4a builds on mathematics (key stage 1), Ma3 Shape, space and measures, paragraph 2, requirements a, c and d.
Citizenship key stage 3	1a → links to other subjects This requirement builds on Hi/10, 13.	Citizenship key stage 3, requirement 1a builds on history (key stage 3) paragraphs 10 and 13.

The attainment targets

The attainment targets **7** are at the end of this handbook. They can be read alongside the programmes of study by folding out the booklet.



General teaching requirements



Inclusion: providing effective learning opportunities for all pupils

Schools have a responsibility to provide a broad and balanced curriculum for all pupils. The National Curriculum is the starting point for planning a school curriculum that meets the specific needs of individuals and groups of pupils. This statutory inclusion statement on providing effective learning opportunities for all pupils outlines how teachers can modify, as necessary, the National Curriculum programmes of study to provide all pupils with relevant and appropriately challenging work at each key stage¹. It sets out three principles that are essential to developing a more inclusive curriculum:

- A Setting suitable learning challenges
- B Responding to pupils' diverse learning needs
- C Overcoming potential barriers to learning and assessment for individuals and groups of pupils.

Applying these principles should keep to a minimum the need for aspects of the National Curriculum to be disapplied for a pupil.

Schools are able to provide other curricular opportunities outside the National Curriculum to meet the needs of individuals or groups of pupils such as speech and language therapy and mobility training.

Three principles for inclusion

In planning and teaching the National Curriculum, teachers are required to have due regard to the following principles.

A Setting suitable learning challenges

- 1 Teachers should aim to give every pupil the opportunity to experience success in learning and to achieve as high a standard as possible. The National Curriculum programmes of study set out what most pupils should be taught at each key stage – but teachers should teach the knowledge, skills and understanding in ways that suit their pupils' abilities. This may mean choosing knowledge, skills and understanding from earlier or later key stages so that individual pupils can make progress and show what they can achieve. Where it is appropriate for pupils to make extensive use of content from an earlier key stage, there may not be time to teach all aspects of the age-related programmes of study. A similarly flexible approach will be needed to take account of any gaps in pupils' learning resulting from missed or interrupted schooling [for example, that may be experienced by travellers, refugees, those in care or those

¹ Additional information on inclusion is included in the subject booklets.

with long-term medical conditions, including pupils with neurological problems, such as head injuries, and those with degenerative conditions].

- 2 For pupils whose attainments fall significantly below the expected levels at a particular key stage, a much greater degree of differentiation will be necessary. In these circumstances, teachers may need to use the content of the programmes of study as a resource or to provide a context, in planning learning appropriate to the age and requirements of their pupils.²
- 3 For pupils whose attainments significantly exceed the expected level of attainment within one or more subjects during a particular key stage, teachers will need to plan suitably challenging work. As well as drawing on materials from later key stages or higher levels of study, teachers may plan further differentiation by extending the breadth and depth of study within individual subjects or by planning work which draws on the content of different subjects.³

B Responding to pupils' diverse learning needs

- 1 When planning, teachers should set high expectations and provide opportunities for all pupils to achieve, including boys and girls, pupils with special educational needs, pupils with disabilities, pupils from all social and cultural backgrounds, pupils of different ethnic groups including travellers, refugees and asylum seekers, and those from diverse linguistic backgrounds. Teachers need to be aware that pupils bring to school different experiences, interests and strengths which will influence the way in which they learn. Teachers should plan their approaches to teaching and learning so that all pupils can take part in lessons fully and effectively.
- 2 To ensure that they meet the full range of pupils' needs, teachers should be aware of the requirements of the equal opportunities legislation that covers race, gender and disability.⁴
- 3 Teachers should take specific action to respond to pupils' diverse needs by:
 - a creating effective learning environments
 - b securing their motivation and concentration
 - c providing equality of opportunity through teaching approaches
 - d using appropriate assessment approaches
 - e setting targets for learning.

Examples for B/3a – creating effective learning environments

Teachers create effective learning environments in which:

- the contribution of all pupils is valued
- all pupils can feel secure and are able to contribute appropriately
- stereotypical views are challenged and pupils learn to appreciate and view positively differences in others, whether arising from race, gender, ability or disability

² Teachers may find QCA's guidance on planning work for pupils with learning difficulties a helpful companion to the programmes of study.

³ Teachers may find QCA's guidance on meeting the requirements of gifted and talented pupils a helpful companion to the programmes of study.

⁴ The Sex Discrimination Act 1975, the Race Relations Act 1976, the Disability Discrimination Act 1995.



- pupils learn to take responsibility for their actions and behaviours both in school and in the wider community
- all forms of bullying and harassment, including racial harassment, are challenged
- pupils are enabled to participate safely in clothing appropriate to their religious beliefs, particularly in subjects such as science, design and technology and physical education.

Examples for B/3b – securing motivation and concentration

Teachers secure pupils' motivation and concentration by:

- using teaching approaches appropriate to different learning styles
- using, where appropriate, a range of organisational approaches, such as setting, grouping or individual work, to ensure that learning needs are properly addressed
- varying subject content and presentation so that this matches their learning needs
- planning work which builds on their interests and cultural experiences
- planning appropriately challenging work for those whose ability and understanding are in advance of their language skills
- using materials which reflect social and cultural diversity and provide positive images of race, gender and disability
- planning and monitoring the pace of work so that they all have a chance to learn effectively and achieve success
- taking action to maintain interest and continuity of learning for pupils who may be absent for extended periods of time.

Examples for B/3c – providing equality of opportunity

Teaching approaches that provide equality of opportunity include:

- ensuring that boys and girls are able to participate in the same curriculum, particularly in science, design and technology and physical education
- taking account of the interests and concerns of boys and girls by using a range of activities and contexts for work and allowing a variety of interpretations and outcomes, particularly in English, science, design and technology, ICT, art and design, music and physical education
- avoiding gender stereotyping when organising pupils into groups, assigning them to activities or arranging access to equipment, particularly in science, design and technology, ICT, music and physical education
- taking account of pupils' specific religious or cultural beliefs relating to the representation of ideas or experiences or to the use of particular types of equipment, particularly in science, design and technology, ICT and art and design
- enabling the fullest possible participation of pupils with disabilities or particular medical needs in all subjects, offering positive role models and making provision, where necessary, to facilitate access to activities with appropriate support, aids or adaptations. (See **Overcoming potential barriers to learning and assessment for individuals and groups of pupils.**)



Examples for B/3d – using appropriate assessment approaches

Teachers use appropriate assessment approaches that:

- allow for different learning styles and ensure that pupils are given the chance and encouragement to demonstrate their competence and attainment through appropriate means
- are familiar to the pupils and for which they have been adequately prepared
- use materials which are free from discrimination and stereotyping in any form
- provide clear and unambiguous feedback to pupils to aid further learning.

Examples for B/3e – setting targets for learning

Teachers set targets for learning that:

- build on pupils' knowledge, experiences, interests and strengths to improve areas of weakness and demonstrate progression over time
- are attainable and yet challenging and help pupils to develop their self-esteem and confidence in their ability to learn.

C Overcoming potential barriers to learning and assessment for individuals and groups of pupils

A minority of pupils will have particular learning and assessment requirements which go beyond the provisions described in sections A and B and, if not addressed, could create barriers to learning. These requirements are likely to arise as a consequence of a pupil having a special educational need or disability or may be linked to a pupil's progress in learning English as an additional language.

- 1 Teachers must take account of these requirements and make provision, where necessary, to support individuals or groups of pupils to enable them to participate effectively in the curriculum and assessment activities. During end of key stage assessments, teachers should bear in mind that special arrangements are available to support individual pupils.

Pupils with special educational needs

- 2 Curriculum planning and assessment for pupils with special educational needs must take account of the type and extent of the difficulty experienced by the pupil. Teachers will encounter a wide range of pupils with special educational needs, some of whom will also have disabilities (see paragraphs C/4 and C/5). In many cases, the action necessary to respond to an individual's requirements for curriculum access will be met through greater differentiation of tasks and materials, consistent with school-based intervention as set out in the SEN Code of Practice. A smaller number of pupils may need access to specialist equipment and approaches or to alternative or adapted activities, consistent with school-based intervention augmented by advice and support from external specialists as described in the SEN Code of Practice, or, in exceptional circumstances, with a statement of special educational need.



Teachers should, where appropriate, work closely with representatives of other agencies who may be supporting the pupil.

- 3 Teachers should take specific action to provide access to learning for pupils with special educational needs by:
 - a providing for pupils who need help with communication, language and literacy
 - b planning, where necessary, to develop pupils' understanding through the use of all available senses and experiences
 - c planning for pupils' full participation in learning and in physical and practical activities
 - d helping pupils to manage their behaviour, to take part in learning effectively and safely, and, at key stage 4, to prepare for work
 - e helping individuals to manage their emotions, particularly trauma or stress, and to take part in learning.

Examples for C/3a – helping with communication, language and literacy

Teachers provide for pupils who need help with communication, language and literacy through:

- using texts that pupils can read and understand
- using visual and written materials in different formats, including large print, symbol text and Braille
- using ICT, other technological aids and taped materials
- using alternative and augmentative communication, including signs and symbols
- using translators, communicators and amanuenses.

Examples for C/3b – developing understanding

Teachers develop pupils' understanding through the use of all available senses and experiences, by:

- using materials and resources that pupils can access through sight, touch, sound, taste or smell
- using word descriptions and other stimuli to make up for a lack of first-hand experiences
- using ICT, visual and other materials to increase pupils' knowledge of the wider world
- encouraging pupils to take part in everyday activities such as play, drama, class visits and exploring the environment.

Examples for C/3c – planning for full participation

Teachers plan for pupils' full participation in learning and in physical and practical activities through:

- using specialist aids and equipment
- providing support from adults or peers when needed
- adapting tasks or environments
- providing alternative activities, where necessary.



Examples for C/3d – managing behaviour

Teachers help pupils to manage their behaviour, take part in learning effectively and safely, and, at key stage 4, prepare for work by:

- setting realistic demands and stating them explicitly
- using positive behaviour management, including a clear structure of rewards and sanctions
- giving pupils every chance and encouragement to develop the skills they need to work well with a partner or a group
- teaching pupils to value and respect the contribution of others
- encouraging and teaching independent working skills
- teaching essential safety rules.

Examples for C/3e – managing emotions

Teachers help individuals manage their emotions and take part in learning through:

- identifying aspects of learning in which the pupil will engage and plan short-term, easily achievable goals in selected activities
- providing positive feedback to reinforce and encourage learning and build self-esteem
- selecting tasks and materials sensitively to avoid unnecessary stress for the pupil
- creating a supportive learning environment in which the pupil feels safe and is able to engage with learning
- allowing time for the pupil to engage with learning and gradually increasing the range of activities and demands.

Pupils with disabilities

- 4 Not all pupils with disabilities will necessarily have special educational needs. Many pupils with disabilities learn alongside their peers with little need for additional resources beyond the aids which they use as part of their daily life, such as a wheelchair, a hearing aid or equipment to aid vision. Teachers must take action, however, in their planning to ensure that these pupils are enabled to participate as fully and effectively as possible within the National Curriculum and the statutory assessment arrangements. Potential areas of difficulty should be identified and addressed at the outset of work, without recourse to the formal provisions for disapplication.
- 5 Teachers should take specific action to enable the effective participation of pupils with disabilities by:
 - a planning appropriate amounts of time to allow for the satisfactory completion of tasks
 - b planning opportunities, where necessary, for the development of skills in practical aspects of the curriculum
 - c identifying aspects of programmes of study and attainment targets that may present specific difficulties for individuals.



Examples for C/5a – planning to complete tasks

Teachers plan appropriate amounts of time to allow pupils to complete tasks satisfactorily through:

- taking account of the very slow pace at which some pupils will be able to record work, either manually or with specialist equipment, and of the physical effort required
- being aware of the high levels of concentration necessary for some pupils when following or interpreting text or graphics, particularly when using vision aids or tactile methods, and of the tiredness which may result
- allocating sufficient time, opportunity and access to equipment for pupils to gain information through experimental work and detailed observation, including the use of microscopes
- being aware of the effort required by some pupils to follow oral work, whether through use of residual hearing, lip reading or a signer, and of the tiredness or loss of concentration which may occur.

Examples for C/5b – developing skills in practical aspects

Teachers create opportunities for the development of skills in practical aspects of the curriculum through:

- providing adapted, modified or alternative activities or approaches to learning in physical education and ensuring that these have integrity and equivalence to the National Curriculum and enable pupils to make appropriate progress
- providing alternative or adapted activities in science, art and design and design and technology for pupils who are unable to manipulate tools, equipment or materials or who may be allergic to certain types of materials
- ensuring that all pupils can be included and participate safely in geography fieldwork, local studies and visits to museums, historic buildings and sites.

Examples for C/5c – overcoming specific difficulties

Teachers overcome specific difficulties for individuals presented by aspects of the programmes of study and attainment targets through:

- using approaches to enable hearing impaired pupils to learn about sound in science and music
- helping visually impaired pupils to learn about light in science, to access maps and visual resources in geography and to evaluate different products in design and technology and images in art and design
- providing opportunities for pupils to develop strength in depth where they cannot meet the particular requirements of a subject, such as the visual requirements in art and design and the singing requirements in music
- discounting these aspects in appropriate individual cases when required to make a judgement against level descriptions.



Pupils who are learning English as an additional language

- 6 Pupils for whom English is an additional language have diverse needs in terms of support necessary in English language learning. Planning should take account of such factors as the pupil's age, length of time in this country, previous educational experience and skills in other languages. Careful monitoring of each pupil's progress in the acquisition of English language skills and of subject knowledge and understanding will be necessary to confirm that no learning difficulties are present.
- 7 The ability of pupils for whom English is an additional language to take part in the National Curriculum may be ahead of their communication skills in English. Teachers should plan learning opportunities to help pupils develop their English and should aim to provide the support pupils need to take part in all subject areas.
- 8 Teachers should take specific action to help pupils who are learning English as an additional language by:
 - a developing their spoken and written English
 - b ensuring access to the curriculum and to assessment.

Examples for C/8a – developing spoken and written English

Teachers develop pupils' spoken and written English through:

- ensuring that vocabulary work covers both the technical and everyday meaning of key words, metaphors and idioms
- explaining clearly how speaking and writing in English are structured to achieve different purposes, across a range of subjects
- providing a variety of reading material [for example, pupils' own work, the media, ICT, literature, reference books] that highlight the different ways English is used, especially those that help pupils to understand society and culture
- ensuring that there are effective opportunities for talk and that talk is used to support writing in all subjects
- where appropriate, encouraging pupils to transfer their knowledge, skills and understanding of one language to another, pointing out similarities and differences between languages
- building on pupils' experiences of language at home and in the wider community, so that their developing uses of English and other languages support one another.

Examples for C/8b – ensuring access

Teachers make sure pupils have access to the curriculum and to assessment through:

- using accessible texts and materials that suit pupils' ages and levels of learning
- providing support by using ICT or video or audio materials, dictionaries and translators, readers and amanuenses
- using home or first language, where appropriate.



Use of language across the curriculum

- 1 Pupils should be taught in all subjects to express themselves correctly and appropriately and to read accurately and with understanding. Since standard English, spoken and written, is the predominant language in which knowledge and skills are taught and learned, pupils should be taught to recognise and use standard English.

Writing

- 2 In writing, pupils should be taught to use correct spelling and punctuation and follow grammatical conventions. They should also be taught to organise their writing in logical and coherent forms.

Speaking

- 3 In speaking, pupils should be taught to use language precisely and cogently.

Listening

- 4 Pupils should be taught to listen to others, and to respond and build on their ideas and views constructively.

Reading

- 5 In reading, pupils should be taught strategies to help them read with understanding, to locate and use information, to follow a process or argument and summarise, and to synthesise and adapt what they learn from their reading.
- 6 Pupils should be taught the technical and specialist vocabulary of subjects and how to use and spell these words. They should also be taught to use the patterns of language vital to understanding and expression in different subjects. These include the construction of sentences, paragraphs and texts that are often used in a subject [for example, language to express causality, chronology, logic, exploration, hypothesis, comparison, and how to ask questions and develop arguments].



Use of information and communication technology across the curriculum

- 1 Pupils should be given opportunities¹ to apply and develop their ICT capability through the use of ICT tools to support their learning in all subjects (with the exception of physical education at key stages 1 and 2).
- 2 Pupils should be given opportunities to support their work by being taught to:
 - a find things out from a variety of sources, selecting and synthesising the information to meet their needs and developing an ability to question its accuracy, bias and plausibility
 - b develop their ideas using ICT tools to amend and refine their work and enhance its quality and accuracy
 - c exchange and share information, both directly and through electronic media
 - d review, modify and evaluate their work, reflecting critically on its quality, as it progresses.

¹ At key stage 1, there are no statutory requirements to teach the use of ICT in the programmes of study for the non-core foundation subjects. Teachers should use their judgement to decide where it is appropriate to teach the use of ICT across these subjects at key stage 1. At other key stages, there are statutory requirements to use ICT in all subjects, except physical education.



Health and safety

- 1 This statement applies to science, design and technology, information and communication technology, art and design, and physical education.
- 2 When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:
 - a about hazards, risks and risk control
 - b to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
 - c to use information to assess the immediate and cumulative risks
 - d to manage their environment to ensure the health and safety of themselves and others
 - e to explain the steps they take to control risks.



Teaching requirements for each subject



Engli

I am going to the fair
will I leave my tummy
there.....

floating in the air
on the roller coaster

with my flying hairs.....

sh



Studying English literature at school was my first, and probably my biggest, step towards mental freedom and independence. It was like falling in love with life.

Ian McEwan, Novelist

The value of English in the curriculum? What can I say? Without English, nothing. And without good English, nothing very well.

Anne Fine, Author

English is the language of the future, the language of the computer. English is the most important tool you'll ever need, no matter what career you choose. You have the right to English. Make it your right!

Benjamin Zephaniah, Poet, Writer, Actor, TV & Radio Presenter

A good book, studied with a good English teacher, takes you on a journey in search of answers to the crucial questions in life you didn't even know you wanted (or needed) to ask.

Professor Lisa Jardine, Queen Mary & Westfield College, University of London

The importance of English

English is a vital way of communicating in school, in public life and internationally. Literature in English is rich and influential, reflecting the experience of people from many countries and times.

In studying English pupils develop skills in speaking, listening, reading and writing.

It enables them to express themselves creatively and imaginatively and to communicate with others effectively. Pupils learn to become enthusiastic and critical readers of stories, poetry and drama as well as non-fiction and media texts.

The study of English helps pupils understand how language works by looking at its patterns, structures and origins. Using this knowledge pupils can choose and adapt what they say and write in different situations.

Programme of study: English

Key stage 1

In English, during key stage 1 pupils learn to speak confidently and listen to what others have to say. They begin to read and write independently and with enthusiasm. They use language to explore their own experiences and imaginary worlds.

Speaking and listening: during key stage 1 pupils learn to speak clearly, thinking about the needs of their listeners. They work in small groups and as a class, joining in discussions and making relevant points. They also learn how to listen carefully to what other people are saying, so that they can remember the main points. They learn to use language in imaginative ways and express their ideas and feelings when working in role and in drama activities.

Building on the early learning goals

Pupils' prior experience of speaking and listening includes:

- using language to imagine and recreate roles and experiences
- attentive listening and response
- interacting with others in play and to get things done.

Teaching should ensure that work in **speaking and listening, reading and writing** is integrated.

En1 Speaking and listening

Knowledge, skills and understanding

Speaking

- 1 To speak clearly, fluently and confidently to different people, pupils should be taught to:
 - a speak with clear diction and appropriate intonation
 - b choose words with precision
 - c organise what they say
 - d focus on the main point(s)
 - e include relevant detail
 - f take into account the needs of their listeners.

Listening

- 2 To listen, understand and respond to others, pupils should be taught to:
 - a sustain concentration
 - b remember specific points that interest them
 - c make relevant comments
 - d listen to others' reactions
 - e ask questions to clarify their understanding
 - f identify and respond to sound patterns in language [for example, alliteration, rhyme, word play].

Group discussion and interaction

- 3 To join in as members of a group, pupils should be taught to:
 - a take turns in speaking
 - b relate their contributions to what has gone on before
 - c take different views into account
 - d extend their ideas in the light of discussion
 - e give reasons for opinions and actions.

Drama

- 4 To participate in a range of drama activities, pupils should be taught to:
 - a use language and actions to explore and convey situations, characters and emotions
 - b create and sustain roles individually and when working with others
 - c comment constructively on drama they have watched or in which they have taken part.

Standard English

- 5 Pupils should be introduced to some of the main features of spoken standard English and be taught to use them.

Language variation

- 6 Pupils should be taught about how speech varies:
- in different circumstances [for example, to reflect on how their speech changes in more formal situations]
 - to take account of different listeners [for example, adapting what they say when speaking to people they do not know].

Breadth of study

- 7 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the following range of activities, contexts and purposes.

Speaking

- 8 The range should include:
- telling stories, real and imagined
 - reading aloud and reciting
 - describing events and experiences
 - speaking to different people, including friends, the class, teachers and other adults.

Listening

- 9 The range should include opportunities for pupils to listen to:
- each other
 - adults giving detailed explanations and presentations [for example, describing how a model works, reading aloud]
 - recordings [for example, radio, television].

Group discussion and interaction

- 10 The range of purposes should include:
- making plans and investigating
 - sharing ideas and experiences
 - commenting and reporting.

Drama activities

- 11 The range should include:
- working in role
 - presenting drama and stories to others [for example, telling a story through tableaux or using a narrator]
 - responding to performances.

Note on standard English

The paragraphs on **standard English**, **language variation**, **language structure** and **language structure and variation in speaking and listening**, **reading and writing** provide a coherent basis for language study.

Note for 5

When teaching **standard English** it is helpful to bear in mind the most common non-standard usages in England:

- subject–verb agreements (they was)
- formation of past tense (have fell, I done)
- formation of negatives (ain't).

Reading: during key stage 1 pupils' interest and pleasure in reading is developed as they learn to read confidently and independently. They focus on words and sentences and how they fit into whole texts. They work out the meaning of straightforward texts and say why they like them or do not like them.

The programme of study for English and the National Literacy Strategy *Framework for teaching* are closely related. The *Framework* provides a detailed basis for implementing the statutory requirements of the programmes of study for **reading** and **writing**.

Building on the early learning goals

Pupils' prior experience of literacy includes:

- knowledge of initial and final sounds and short vowel sounds in words
- stories, poems and other texts
- recognition of some familiar words.

Note for 2a

Organisational features in CD-ROMs and web pages include icons, hotlinks and menus.

En2 Reading

Knowledge, skills and understanding

Reading strategies

- 1 To read with fluency, accuracy, understanding and enjoyment, pupils should be taught to use a range of strategies to make sense of what they read. They should be taught to:

Phonemic awareness and phonic knowledge

- a hear, identify, segment and blend phonemes in words
- b sound and name the letters of the alphabet
- c link sound and letter patterns, exploring rhyme, alliteration and other sound patterns
- d identify syllables in words
- e recognise that the same sounds may have different spellings and that the same spellings may relate to different sounds

Word recognition and graphic knowledge

- f read on sight high-frequency words and other familiar words
- g recognise words with common spelling patterns
- h recognise specific parts of words, including prefixes, suffixes, inflectional endings, plurals

Grammatical awareness

- i understand how word order affects meaning
- j decipher new words, and confirm or check meaning
- k work out the sense of a sentence by rereading or reading ahead

Contextual understanding

- l focus on meaning derived from the text as a whole
- m use their knowledge of book conventions, structure, sequence and presentational devices
- n draw on their background knowledge and understanding of the content.

Reading for information

- 2 Pupils should be taught to:
 - a use the organisational features of non-fiction texts, including captions, illustrations, contents, index and chapters, to find information
 - b understand that texts about the same topic may contain different information or present similar information in different ways
 - c use reference materials for different purposes.

Literature

- 3 To develop their understanding of fiction, poetry and drama, pupils should be taught to:
- identify and describe characters, events and settings in fiction
 - use their knowledge of sequence and story language when they are retelling stories and predicting events
 - express preferences, giving reasons
 - learn, recite and act out stories and poems
 - identify patterns of rhythm, rhyme and sounds in poems and their effects
 - respond imaginatively in different ways to what they read [for example, using the characters from a story in drama, writing poems based on ones they read, showing their understanding through art or music].

Language structure and variation

- 4 To read texts with greater accuracy and understanding, pupils should be taught about the characteristics of different types of text [for example, beginnings and endings in stories, use of captions].

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the following ranges of literature and non-fiction and non-literary texts.

Literature

- 6 The range should include:
- stories and poems with familiar settings and those based on imaginary or fantasy worlds
 - stories, plays and poems by significant children's authors
 - retellings of traditional folk and fairy stories
 - stories and poems from a range of cultures
 - stories, plays and poems with patterned and predictable language
 - stories and poems that are challenging in terms of length or vocabulary
 - texts where the use of language benefits from being read aloud and reread.

Non-fiction and non-literary texts

- 7 The range should include:
- print and ICT-based information texts, including those with continuous text and relevant illustrations
 - dictionaries, encyclopedias and other reference materials.

Writing: during key stage 1 pupils start to enjoy writing and see the value of it. They learn to communicate meaning in narrative and non-fiction texts and spell and punctuate correctly.

The programme of study for English and the National Literacy Strategy *Framework for teaching* are closely related. The *Framework* provides a detailed basis for implementing the statutory requirements of the programmes of study for **reading** and **writing**.

Building on the early learning goals

Pupils' prior experience of literacy includes:

- differentiating between print and pictures
- the connections between speech and writing
- the symbolic nature of writing, the sounds and names of letters and how to write them.

2c → ICT opportunity

Pupils could compare print-outs from two different drafts of their own writing to check revisions and improvements.

En3 Writing

Knowledge, skills and understanding

Composition

- 1 Pupils should be taught to:
 - a use adventurous and wide-ranging vocabulary
 - b sequence events and recount them in appropriate detail
 - c put their ideas into sentences
 - d use a clear structure to organise their writing
 - e vary their writing to suit the purpose and reader
 - f use the texts they read as models for their own writing.

Planning and drafting

- 2 Working with the teacher and with others, in order to develop their writing, pupils should be taught to:
 - a write familiar words and attempt unfamiliar ones
 - b assemble and develop ideas on paper and on screen
 - c plan and review their writing, discussing the quality of what is written
 - d write extended texts, with support [for example, using the teacher as writer].

Punctuation

- 3 Pupils should be taught:
 - a how punctuation helps a reader understand what is written
 - b the connections between punctuation and sentence structure, intonation and emphasis
 - c to use capital letters, full stops, question marks and to begin to use commas.

Spelling

- 4 Pupils should be taught to:

Spelling strategies

 - a write each letter of the alphabet
 - b use their knowledge of sound–symbol relationships and phonological patterns [for example, consonant clusters and vowel phonemes]
 - c recognise and use simple spelling patterns
 - d write common letter strings
 - e spell common words
 - f spell words with common prefixes and inflectional endings

Checking spelling

- g check the accuracy of their spelling, using word banks and dictionaries
- h use their knowledge of word families and other words
- i identify reasons for misspellings.

Handwriting and presentation

5 In order to develop a legible style, pupils should be taught:

Handwriting

- a how to hold a pencil/pen
- b to write from left to right and top to bottom of a page
- c to start and finish letters correctly
- d to form letters of regular size and shape
- e to put regular spaces between letters and words
- f how to form lower- and upper-case letters
- g how to join letters

Presentation

- h the importance of clear and neat presentation in order to communicate their meaning effectively.

Standard English

6 Pupils should be taught some of the grammatical features of written standard English.

Language structure

7 In composing their own texts, pupils should be taught to consider:

- a how word choice and order are crucial to meaning
- b the nature and use of nouns, verbs and pronouns
- c how ideas may be linked in sentences and how sequences of sentences fit together.

Breadth of study

8 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through addressing the following ranges of purposes, readers and forms of writing.

9 The range of purposes for writing should include:

- a to communicate to others
- b to create imaginary worlds
- c to explore experience
- d to organise and explain information.

10 Pupils should be taught the value of writing for remembering and developing ideas.

11 The range of readers for writing should include teachers, other adults, children and the writers themselves.

12 The range of forms of writing should include narratives, poems, notes, lists, captions, records, messages, instructions.

Programme of study: English

Key stage 2

In English, during key stage 2 pupils learn to change the way they speak and write to suit different situations, purposes and audiences. They read a range of texts and respond to different layers of meaning in them. They explore the use of language in literary and non-literary texts and learn how language works.

Speaking and listening: during key stage 2 pupils learn how to speak in a range of contexts, adapting what they say and how they say it to the purpose and the audience. Taking varied roles in groups gives them opportunities to contribute to situations with different demands. They also learn to respond appropriately to others, thinking about what has been said and the language used.

Teaching should ensure that work in **speaking and listening**, reading and writing is integrated.

En1 Speaking and listening

Knowledge, skills and understanding

Speaking

- 1 To speak with confidence in a range of contexts, adapting their speech for a range of purposes and audiences, pupils should be taught to:
 - a use vocabulary and syntax that enables them to communicate more complex meanings
 - b gain and maintain the interest and response of different audiences [for example, by exaggeration, humour, varying pace and using persuasive language to achieve particular effects]
 - c choose material that is relevant to the topic and to the listeners
 - d show clear shape and organisation with an introduction and an ending
 - e speak audibly and clearly, using spoken standard English in formal contexts
 - f evaluate their speech and reflect on how it varies.

Listening

- 2 To listen, understand and respond appropriately to others, pupils should be taught to:
 - a identify the gist of an account or key points in a discussion and evaluate what they hear
 - b ask relevant questions to clarify, extend and follow up ideas
 - c recall and re-present important features of an argument, talk, reading, radio or television programme, film
 - d identify features of language used for a specific purpose [for example, to persuade, instruct or entertain]
 - e respond to others appropriately, taking into account what they say.

Group discussion and interaction

- 3 To talk effectively as members of a group, pupils should be taught to:
 - a make contributions relevant to the topic and take turns in discussion
 - b vary contributions to suit the activity and purpose, including exploratory and tentative comments where ideas are being collected together, and reasoned, evaluative comments as discussion moves to conclusions or actions
 - c qualify or justify what they think after listening to others' questions or accounts
 - d deal politely with opposing points of view and enable discussion to move on
 - e take up and sustain different roles, adapting them to suit the situation, including chair, scribe and spokesperson

- f use different ways to help the group move forward, including summarising the main points, reviewing what has been said, clarifying, drawing others in, reaching agreement, considering alternatives and anticipating consequences.

Drama

- 4 To participate in a wide range of drama activities and to evaluate their own and others' contributions, pupils should be taught to:
- create, adapt and sustain different roles, individually and in groups
 - use character, action and narrative to convey story, themes, emotions, ideas in plays they devise and script
 - use dramatic techniques to explore characters and issues [for example, hot seating, flashback]
 - evaluate how they and others have contributed to the overall effectiveness of performances.

Standard English

- 5 Pupils should be taught the grammatical constructions that are characteristic of spoken standard English and to apply this knowledge appropriately in a range of contexts.

Language variation

- 6 Pupils should be taught about how language varies:
- according to context and purpose [for example, choice of vocabulary in more formal situations]
 - between standard and dialect forms [for example, in drama, the effect of using standard or dialect forms]
 - between spoken and written forms [for example, the differences between transcribed speech, direct speech and reported speech].

Breadth of study

- 7 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the following range of activities, contexts and purposes.

Speaking

- 8 The range should include:
- reading aloud
 - presenting to different audiences
 - extended speaking for different purposes.

Listening

- 9 The range should include opportunities for pupils to listen to:
- live talks/readings/presentations
 - recordings [for example, radio, television, film]
 - others in groups.

Note on standard English

The paragraphs on **standard English**, **language variation**, **language structure** and **language structure and variation in speaking and listening**, **reading and writing** provide a coherent basis for language study.

Note for 5

When teaching **standard English** it is helpful to bear in mind the most common non-standard usages in England:

- subject–verb agreement (they was)
- formation of past tense (have fell, I done)
- formation of negatives (ain't)
- formation of adverbs (come quick)
- use of demonstrative pronouns (them books).

Group discussion and interaction

- 10 The range of purposes should include:
- a investigating, selecting, sorting
 - b planning, predicting, exploring
 - c explaining, reporting, evaluating.

Drama activities

- 11 The range should include:
- a improvisation and working in role
 - b scripting and performing in plays
 - c responding to performances.

En2 Reading

Knowledge, skills and understanding

Reading strategies

- 1 To read with fluency, accuracy and understanding, pupils should be taught to use:
 - a phonemic awareness and phonic knowledge
 - b word recognition and graphic knowledge
 - c knowledge of grammatical structures
 - d contextual understanding.

Understanding texts

- 2 Pupils should be taught to:
 - a use inference and deduction
 - b look for meaning beyond the literal
 - c make connections between different parts of a text [for example, how stories begin and end, what has been included and omitted in information writing]
 - d use their knowledge of other texts they have read.

Reading for information

- 3 Pupils should be taught to:
 - a scan texts to find information
 - b skim for gist and overall impression
 - c obtain specific information through detailed reading
 - d draw on different features of texts, including print, sound and image, to obtain meaning
 - e use organisational features and systems to find texts and information
 - f distinguish between fact and opinion [for example, by looking at the purpose of the text, the reliability of information]
 - g consider an argument critically.

Literature

- 4 To develop understanding and appreciation of literary texts, pupils should be taught to:
 - a recognise the choice, use and effect of figurative language, vocabulary and patterns of language
 - b identify different ways of constructing sentences and their effects
 - c identify how character and setting are created, and how plot, narrative structure and themes are developed
 - d recognise the differences between author, narrator and character
 - e evaluate ideas and themes that broaden perspectives and extend thinking
 - f consider poetic forms and their effects

Reading: during key stage 2 pupils read enthusiastically a range of materials and use their knowledge of words, sentences and texts to understand and respond to the meaning. They increase their ability to read challenging and lengthy texts independently. They reflect on the meaning of texts, analysing and discussing them with others.

The programme of study for English and the National Literacy Strategy *Framework for teaching* are closely related. The *Framework* provides a detailed basis for implementing the statutory requirements of the programmes of study for reading and writing.

Note for 3a–3e

Retrieving information on screen includes knowing how to:

- use the search and find facilities to skim and scan effectively
- use key words
- summarise information rather than print off large sections of text.

8 → ICT opportunity

Pupils could use moving image texts (for example, television, film, multimedia) to support their study of literary texts and to study how words, images and sounds are combined to convey meaning and emotion.

- g express preferences and support their views by reference to texts
- h respond imaginatively, drawing on the whole text and other reading
- i read stories, poems and plays aloud.

Non-fiction and non-literary texts

- 5 To develop understanding and appreciation of non-fiction and non-literary texts, pupils should be taught to:
- a identify the use and effect of specialist vocabulary
 - b identify words associated with reason, persuasion, argument, explanation, instruction and description
 - c recognise phrases and sentences that convey a formal, impersonal tone
 - d identify links between ideas and sentences in non-chronological writing
 - e understand the structural and organisational features of different types of text [for example, paragraphing, subheadings, links in hypertext]
 - f evaluate different formats, layouts and presentational devices [for example, tables, bullet points, icons]
 - g engage with challenging and demanding subject matter.

Language structure and variation

- 6 To read texts with greater accuracy and understanding, pupils should be taught to identify and comment on features of English at word, sentence and text level, using appropriate terminology [for example, how adjectives and adverbs contribute to overall effect, the use of varying sentence length and structure, connections between chapters or sections].

Breadth of study

- 7 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the following ranges of literature and non-fiction and non-literary texts.

Literature

- 8 The range should include:
- a a range of modern fiction by significant children's authors
 - b long-established children's fiction
 - c a range of good-quality modern poetry
 - d classic poetry
 - e texts drawn from a variety of cultures and traditions
 - f myths, legends and traditional stories
 - g playscripts.

Non-fiction and non-literary texts

- 9 The range should include:
- a diaries, autobiographies, biographies, letters
 - b print and ICT-based reference and information materials [for example, textbooks, reports, encyclopedias, handbooks, dictionaries, thesauruses, glossaries, CD-ROMs, internet]
 - c newspapers, magazines, articles, leaflets, brochures, advertisements.

Writing: during key stage 2 pupils develop understanding that writing is both essential to thinking and learning, and enjoyable in its own right. They learn the main rules and conventions of written English and start to explore how the English language can be used to express meaning in different ways. They use the planning, drafting and editing process to improve their work and to sustain their fiction and non-fiction writing.

The programme of study for English and the National Literacy Strategy *Framework for teaching* are closely related. The *Framework* provides a detailed basis for implementing the statutory requirements of the programmes of study for reading and writing.

1 → ICT opportunity

Pupils could compose on screen and on paper.

Note for 2a, 2d

On screen this includes using the planning and proofing tools in a word processor (for example, thesaurus, grammar checker).

En3 Writing

Knowledge, skills and understanding

Composition

- 1 Pupils should be taught to:
 - a choose form and content to suit a particular purpose [for example, notes to read or organise thinking, plans for action, poetry for pleasure]
 - b broaden their vocabulary and use it in inventive ways
 - c use language and style that are appropriate to the reader
 - d use and adapt the features of a form of writing, drawing on their reading
 - e use features of layout, presentation and organisation effectively.

Planning and drafting

- 2 To develop their writing on paper and on screen, pupils should be taught to:
 - a plan – note and develop initial ideas
 - b draft – develop ideas from the plan into structured written text
 - c revise – change and improve the draft
 - d proofread – check the draft for spelling and punctuation errors, omissions and repetitions
 - e present – prepare a neat, correct and clear final copy
 - f discuss and evaluate their own and others' writing.

Punctuation

- 3 Pupils should be taught to use punctuation marks correctly in their writing, including full stops, question and exclamation marks, commas, inverted commas, and apostrophes to mark possession and omission.

Spelling

- 4 Pupils should be taught:
 - Spelling strategies**
 - a to sound out phonemes
 - b to analyse words into syllables and other known words
 - c to apply knowledge of spelling conventions
 - d to use knowledge of common letter strings, visual patterns and analogies
 - e to check their spelling using word banks, dictionaries and spellcheckers
 - f to revise and build on their knowledge of words and spelling patterns
 - Morphology**
 - g the meaning, use and spelling of common prefixes and suffixes
 - h the spelling of words with inflectional endings
 - i the relevance of word families, roots and origins of words
 - j the use of appropriate terminology, including vowel, consonant, homophone and syllable.

Handwriting and presentation

- 5 Pupils should be taught to:
- write legibly in both joined and printed styles with increasing fluency and speed
 - use different forms of handwriting for different purposes [for example, print for labelling maps or diagrams, a clear, neat hand for finished presented work, a faster script for notes].

Standard English

- 6 Pupils should be taught:
- how written standard English varies in degrees of formality [for example, differences between a letter to a friend about a school trip and a report for display]
 - some of the differences between standard and non-standard English usage, including subject–verb agreements and use of prepositions.

Language structure

- 7 Pupils should be taught:
- word classes and the grammatical functions of words, including nouns, verbs, adjectives, adverbs, pronouns, prepositions, conjunctions, articles
 - the features of different types of sentence, including statements, questions and commands, and how to use them [for example, imperatives in commands]
 - the grammar of complex sentences, including clauses, phrases and connectives
 - the purposes and organisational features of paragraphs, and how ideas can be linked.

Breadth of study

- 8 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through addressing the following range of purposes, readers and forms of writing.
- 9 The range of purposes for writing should include:
- to imagine and explore feelings and ideas, focusing on creative uses of language and how to interest the reader
 - to inform and explain, focusing on the subject matter and how to convey it in sufficient detail for the reader
 - to persuade, focusing on how arguments and evidence are built up and language used to convince the reader
 - to review and comment on what has been read, seen or heard, focusing on both the topic and the writer's view of it.
- 10 Pupils should also be taught to use writing to help their thinking, investigating, organising and learning.

Note for 9

The selection of a form for writing is closely related to the writer's purpose and the intended reader.

Note for 11

Readers could include those contacted through post, fax or e-mail.

Note for 12

Each of the forms within this range includes different text types with specific organisational and grammatical conventions.

- 11 The range of readers for writing should include teachers, the class, other children, adults, the wider community and imagined readers.
- 12 The range of forms of writing should include narratives, poems, playscripts, reports, explanations, opinions, instructions, reviews, commentaries.

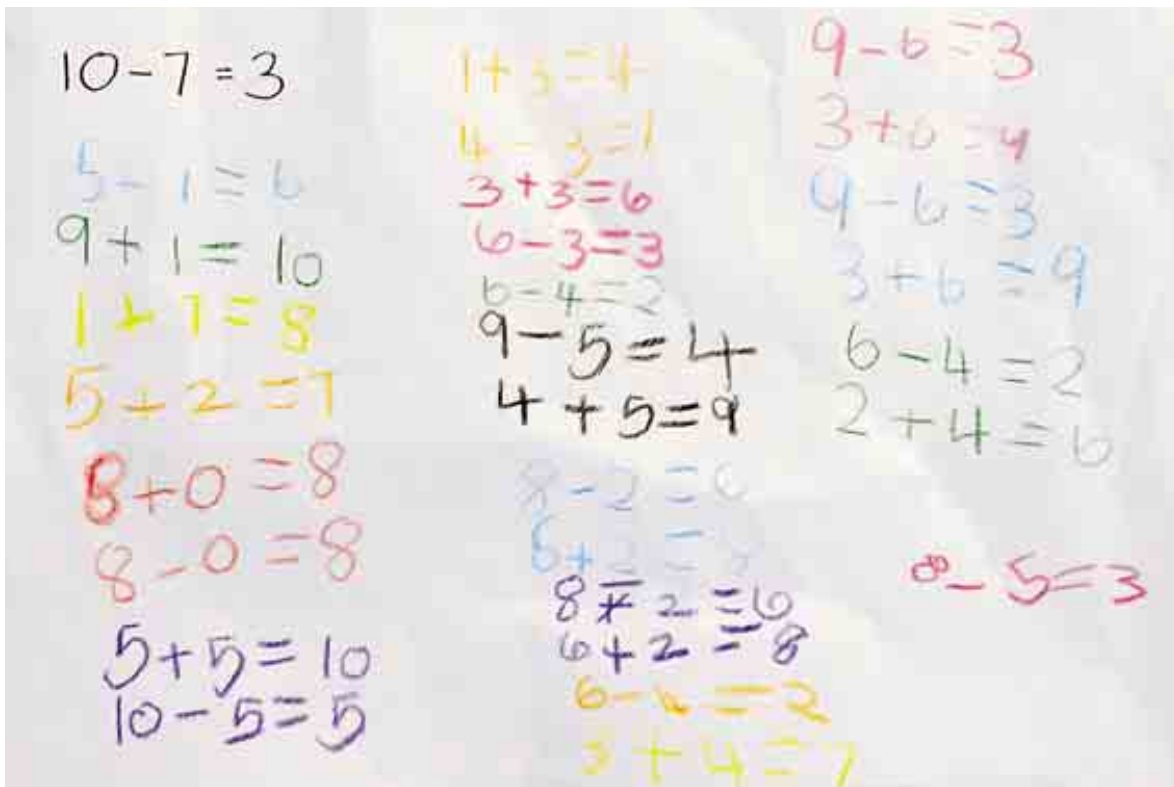
The importance of mathematics

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. Mathematics is important in everyday life, many forms of employment, science and technology, medicine, the economy, the environment and development, and in public decision-making.

Different cultures have contributed to the development and application of mathematics. Today, the subject transcends cultural boundaries and its importance is universally recognised. Mathematics is a creative discipline. It can stimulate moments of pleasure and wonder when a pupil solves a problem for the first time, discovers a more elegant solution to that problem, or suddenly sees hidden connections.

Mathematics

2. Write the sums down as you find them.
Coloured pencils will help.



I find sums on the number square.

10	1	9	6	7
5	7	6	4	2
5	8	3	2	5
9	5	4	3	1
8	0	8	2	6

atics

Maths is the study of patterns abstracted from the world around us – so anything we learn in maths has literally thousands of applications, in arts, sciences, finance, health and leisure!

Professor Ruth Lawrence, University of Michigan

Mathematics is not just a collection of skills, it is a way of thinking. It lies at the core of scientific understanding, and of rational and logical argument.

Dr Colin Sparrow, Lecturer in Mathematics, University of Cambridge

Maths is the truly global language. With it, we convey ideas to each other that words can't handle – and bypass our spoken Tower of Babel.

Professor Alison Wolf, Head of Mathematical Sciences Group, Institute of Education, University of London

If you want to take part in tomorrow's world, you'll need mathematics and statistics just as much as grammar and syntax.

Professor Robert Worcester, Chairman, Market Opinion Research International

Since the age of ten, I've been hooked on mathematical problems as intellectual challenges. However, nobody has to worry that pure mathematics won't be used. Mathematics – even some of the most abstruse mathematics that we thought would never be used – is now used every time you use your credit card, every time you use your computer.

Professor Andrew Wiles, Princeton University

I liked doing the Sum Search because I found a lot of sums and I liked doing it with my friend.

Programme of study: mathematics

Key stage 1

During key stage 1 pupils develop their knowledge and understanding of mathematics through practical activity, exploration and discussion. They learn to count, read, write and order numbers to 100 and beyond. They develop a range of mental calculation skills and use these confidently in different settings. They learn about shape and space through practical activity which builds on their understanding of their immediate environment. They begin to grasp mathematical language, using it to talk about their methods and explain their reasoning when solving problems.

The mathematics programmes of study and the National Numeracy Strategy *Framework for teaching mathematics* are fully aligned. The *Framework* provides a detailed basis for implementing the statutory requirements of the programme of study for key stage 1 in mathematics.

Building on the early learning goals

Pupils' prior experience of mathematics includes:

- counting and using numbers to at least 10 in familiar contexts
- recognising numerals 1 to 9
- talking about and creating simple patterns
- beginning to understand addition as combining two groups of objects and subtraction as 'taking away'
- describing the shape and size of solid and flat shapes
- using everyday words to describe position
- using early mathematical ideas to solve practical problems.

Note about sections

There is no separate section of the programme of study numbered Ma1 that corresponds to the first attainment target, **using and applying mathematics**. Teaching requirements relating to this attainment target are included within the other sections of the programme of study.

Knowledge, skills and understanding

Teaching should ensure that appropriate connections are made between the sections on **number** and **shape, space and measures**.

Ma2 Number

Using and applying number

1 Pupils should be taught to:

Problem solving

- a approach problems involving number, and data presented in a variety of forms, in order to identify what they need to do
- b develop flexible approaches to problem solving and look for ways to overcome difficulties
- c make decisions about which operations and problem-solving strategies to use
- d organise and check their work

Communicating

- e use the correct language, symbols and vocabulary associated with number and data
- f communicate in spoken, pictorial and written form, at first using informal language and recording, then mathematical language and symbols

Reasoning

- g present results in an organised way
- h understand a general statement and investigate whether particular cases match it
- i explain their methods and reasoning when solving problems involving number and data.

Numbers and the number system

2 Pupils should be taught to:

Counting

- a count reliably up to 20 objects at first and recognise that if the objects are rearranged the number stays the same; be familiar with the numbers 11 to 20; gradually extend counting to 100 and beyond

Number patterns and sequences

- b create and describe number patterns; explore and record patterns related to addition and subtraction, and then patterns of multiples of 2, 5 and 10 explaining the patterns and using them to make predictions; recognise sequences, including odd and even numbers to 30 then beyond; recognise the relationship between halving and doubling

The number system

- c read and write numbers to 20 at first and then to 100 or beyond; understand and use the vocabulary of comparing and ordering these numbers; recognise that the position of a digit gives its value and know what each digit represents, including zero as a place-holder; order a set of one- and two-digit numbers and position them on a number line and hundred-square; round any two-digit number to the nearest 10.

Calculations

- 3 Pupils should be taught to:

Number operations and the relationships between them

- a understand addition and use related vocabulary; recognise that addition can be done in any order; understand subtraction as both 'take away' and 'difference' and use the related vocabulary; recognise that subtraction is the inverse of addition; give the subtraction corresponding to an addition and vice versa; use the symbol '=' to represent equality; solve simple missing number problems [for example, $6 = 2 + \square$]
- b understand multiplication as repeated addition; understand that halving is the inverse of doubling and find one half and one quarter of shapes and small numbers of objects; begin to understand division as grouping (repeated subtraction); use vocabulary associated with multiplication and division

Mental methods

- c develop rapid recall of number facts: know addition and subtraction facts to 10 and use these to derive facts with totals to 20, know multiplication facts for the $\times 2$ and $\times 10$ multiplication tables and derive corresponding division facts, know doubles of numbers to 10 and halves of even numbers to 20
- d develop a range of mental methods for finding, from known facts, those that they cannot recall, including adding 10 to any single-digit number, then adding and subtracting a multiple of 10 to or from a two-digit number; develop a variety of methods for adding and subtracting, including making use of the facts that addition can be done in any order and that subtraction is the inverse of addition
- e carry out simple calculations of the form $40 + 30 = \square$, $40 + \square = 100$, $56 - \square = 10$; record calculations in a number sentence, using the symbols +, -, \times , \div and = correctly [for example, $7 + 2 = 9$].

1e, 1f → links to other subjects

These requirements build on En1/1b–1c and En3/1c.

1f → ICT opportunity

Pupils could use ICT to communicate results using appropriate mathematical symbols.

Note for 1i

Explaining methods is an important foundation for reasoning and proof in later key stages.

Note for 5

This provides a basis for pupils' understanding of handling data in later key stages.

Solving numerical problems

- 4 Pupils should be taught to:
- a choose sensible calculation methods to solve whole-number problems (including problems involving money or measures), drawing on their understanding of the operations
 - b check that their answers are reasonable and explain their methods or reasoning.

Processing, representing and interpreting data

- 5 Pupils should be taught to:
- a solve a relevant problem by using simple lists, tables and charts to sort, classify and organise information
 - b discuss what they have done and explain their results.

Ma3 Shape, space and measures

Using and applying shape, space and measures

1 Pupils should be taught to:

Problem solving

- a try different approaches and find ways of overcoming difficulties when solving shape and space problems
- b select and use appropriate mathematical equipment when solving problems involving measures or measurement
- c select and use appropriate equipment and materials when solving shape and space problems

Communicating

- d use the correct language and vocabulary for shape, space and measures

Reasoning

- e recognise simple spatial patterns and relationships and make predictions about them
- f use mathematical communication and explanation skills.

Understanding patterns and properties of shape

2 Pupils should be taught to:

- a describe properties of shapes that they can see or visualise using the related vocabulary
- b observe, handle and describe common 2-D and 3-D shapes; name and describe the mathematical features of common 2-D and 3-D shapes, including triangles of various kinds, rectangles including squares, circles, cubes, cuboids, then hexagons, pentagons, cylinders, pyramids, cones and spheres
- c create 2-D shapes and 3-D shapes
- d recognise reflective symmetry in familiar 2-D shapes and patterns.

Understanding properties of position and movement

3 Pupils should be taught to:

- a observe, visualise and describe positions, directions and movements using common words
- b recognise movements in a straight line (translations) and rotations, and combine them in simple ways [for example, give instructions to get to the headteacher's office or for rotating a programmable toy]
- c recognise right angles.

1b → ICT opportunity

Pupils could use both digital and analogue devices to measure weight or time.

1d → links to other subjects

This requirement builds on En1/1b.

Note for 1f

These skills are important foundations for geometrical reasoning and proof in later key stages.

Note for 4a

In the international system of units, kilogram (kg) is the unit of mass. In practice, mass is measured by weighing; scales measure or compare a force (a push or a pull). At key stage 1 it is acceptable to treat weight as synonymous with mass.

4b → ICT opportunity

Pupils could programme a toy to follow a path involving half- and quarter-turns.

Understanding measures

- 4 Pupils should be taught to:
- estimate the size of objects and order them by direct comparison using appropriate language; put familiar events in chronological order; compare and measure objects using uniform non-standard units [for example, a straw, wooden cubes], then with a standard unit of length (cm, m), weight (kg), capacity (l) [for example, 'longer or shorter than a metre rule', 'three-and-a-bit litre jugs']; compare the durations of events using a standard unit of time
 - understand angle as a measure of turn using whole turns, half-turns and quarter-turns
 - estimate, measure and weigh objects; choose and use simple measuring instruments, reading and interpreting numbers, and scales to the nearest labelled division.

Breadth of study

- 1 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
- practical activity, exploration and discussion
 - using mathematical ideas in practical activities, then recording these using objects, pictures, diagrams, words, numbers and symbols
 - using mental images of numbers and their relationships to support the development of mental calculation strategies
 - estimating, drawing and measuring in a range of practical contexts
 - drawing inferences from data in practical activities
 - exploring and using a variety of resources and materials, including ICT
 - activities that encourage them to make connections between number work and other aspects of their work in mathematics.

Programme of study: mathematics

Key stage 2

Knowledge, skills and understanding

Teaching should ensure that appropriate connections are made between the sections on **number**, **shape, space and measures**, and **handling data**.

Ma2 Number

Using and applying number

1 Pupils should be taught to:

Problem solving

- a make connections in mathematics and appreciate the need to use numerical skills and knowledge when solving problems in other parts of the mathematics curriculum
- b break down a more complex problem or calculation into simpler steps before attempting a solution; identify the information needed to carry out the tasks
- c select and use appropriate mathematical equipment, including ICT
- d find different ways of approaching a problem in order to overcome any difficulties
- e make mental estimates of the answers to calculations; check results

Communicating

- f organise work and refine ways of recording
- g use notation diagrams and symbols correctly within a given problem
- h present and interpret solutions in the context of the problem
- i communicate mathematically, including the use of precise mathematical language

Reasoning

- j understand and investigate general statements [for example, 'there are four prime numbers less than 10', 'wrist size is half neck size']
- k search for pattern in their results; develop logical thinking and explain their reasoning.

Numbers and the number system

2 Pupils should be taught to:

Counting

- a count on and back in tens or hundreds from any two- or three-digit number; recognise and continue number sequences formed by counting on or back in steps of constant size from any integer, extending to negative integers when counting back

During key stage 2 pupils use the number system more confidently. They move from counting reliably to calculating fluently with all four number operations. They always try to tackle a problem with mental methods before using any other approach. Pupils explore features of shape and space and develop their measuring skills in a range of contexts. They discuss and present their methods and reasoning using a wider range of mathematical language, diagrams and charts.

The mathematics programmes of study and the National Numeracy Strategy *Framework for teaching mathematics* are fully aligned. The *Framework* provides a detailed basis for implementing the statutory requirements of the programme of study for key stage 2 in mathematics.

Note about sections

There is no separate section of the programme of study numbered Ma1 that corresponds to the first attainment target, **using and applying mathematics**. Teaching requirements relating to this attainment target are included within the other sections of the programme of study.

1f → links to other subjects

This requirement builds on En3/1a, 1e.

1g → links to other subjects

This requirement builds on En1/1a, 1d.

Number patterns and sequences

- b recognise and describe number patterns, including two- and three-digit multiples of 2, 5 or 10, recognising their patterns and using these to make predictions; make general statements, using words to describe a functional relationship, and test these; recognise prime numbers to 20 and square numbers up to 10×10 ; find factor pairs and all the prime factors of any two-digit integer

Integers

- c read, write and order whole numbers, recognising that the position of a digit gives its value; use correctly the symbols $<$, $>$, $=$; multiply and divide any integer by 10 or 100 then extend to multiplying and dividing by 1000; round integers to the nearest 10 or 100 and then 1000; order a set of negative integers, explaining methods and reasoning; multiply and divide decimals by 10 or 100

Fractions, percentages and ratio

- d understand unit fractions [for example, $\frac{1}{3}$ or $\frac{1}{8}$] then fractions that are several parts of one whole [for example, $\frac{2}{3}$ or $\frac{5}{8}$], locate them on a number line and use them to find fractions of shapes and quantities
- e understand simple equivalent fractions and simplify fractions by cancelling common factors; compare and order simple fractions by converting them to fractions with a common denominator, explaining their methods and reasoning
- f recognise the equivalence between the decimal and fraction forms of one half, quarters, tenths and hundredths; understand that 'percentage' means the 'number of parts per 100' and that it can be used for comparisons; find percentages of whole number quantities, using a calculator where appropriate
- g recognise approximate proportions of a whole and use simple fractions and percentages to describe them, explaining their methods and reasoning
- h solve simple problems involving ratio and direct proportion

Decimals

- i understand and use decimal notation for tenths and hundredths in context [for example, order amounts of money, round a sum of money to the nearest £, convert a length such as 1.36 metres to centimetres and vice versa]; locate on a number line, and order, a set of numbers or measurements; then recognise thousandths (only in metric measurements)
- j round a number with one or two decimal places to the nearest integer or tenth; convert between centimetres and millimetres or metres, then between millimetres and metres, and metres and kilometres, explaining methods and reasoning.

Calculations

3 Pupils should be taught to:

Number operations and the relationships between them

- a develop further their understanding of the four number operations and the relationships between them including inverses; use the related vocabulary; choose suitable number operations to solve a given problem, and recognise similar problems to which they apply
- b find remainders after division, then express a quotient as a fraction or decimal; round up or down after division, depending on the context
- c understand the use of brackets to determine the order of operations; understand why the commutative, associative and distributive laws apply to addition and multiplication and how they can be used to do mental and written calculations more efficiently

Mental methods

- d recall all addition and subtraction facts for each number to 20
- e work out what they need to add to any two-digit number to make 100, then add or subtract any pair of two-digit whole numbers; handle particular cases of three-digit and four-digit additions and subtractions by using compensation or other methods [for example, $3000 - 1997$, $4560 + 998$]
- f recall multiplication facts to 10×10 and use them to derive quickly the corresponding division facts
- g double and halve any two-digit number
- h multiply and divide, at first in the range 1 to 100 [for example, 27×3 , $65 \div 5$], then for particular cases of larger numbers by using factors, distribution or other methods

Written methods

- i use written methods to add and subtract positive integers less than 1000, then up to 10000, then add and subtract numbers involving decimals; use approximations and other strategies to check that their answers are reasonable
- j use written methods for short multiplication and division by a single-digit integer of two-digit then three-digit then four-digit integers, then of numbers with decimals; then use long multiplication, at first for two-digit by two-digit integer calculations, then for three-digit by two-digit calculations; extend division to informal methods of dividing by a two-digit divisor [for example, $64 \div 16$]; use approximations and other strategies to check that their answers are reasonable

Note for 3c

Pupils do not need to know the names of these laws.

Note for 3i, 3j

Pupils are expected to use mental methods if the calculations are suitable.

4d → ICT opportunity

Pupils could construct and use a formula to transform one list of data to another.

Calculator methods

- k use a calculator for calculations involving several digits, including decimals; use a calculator to solve number problems [for example, $4 \square \times 7 = 343$]; know how to enter and interpret money calculations and fractions; know how to select the correct key sequence for calculations with more than one operation [for example, $56 \times (87 - 48)$].

Solving numerical problems

- 4 Pupils should be taught to:
 - a choose, use and combine any of the four number operations to solve word problems involving numbers in 'real life', money or measures of length, mass, capacity or time, then perimeter and area
 - b choose and use an appropriate way to calculate and explain their methods and reasoning
 - c estimate answers by approximating and checking that their results are reasonable by thinking about the context of the problem, and where necessary checking accuracy [for example, by using the inverse operation, by repeating the calculation in a different order]
 - d recognise, represent and interpret simple number relationships, constructing and using formulae in words then symbols [for example, $c = 15n$ is the cost, in pence, of n articles at 15p each]
 - e read and plot coordinates in the first quadrant, then in all four quadrants [for example, plot the vertices of a rectangle, or a graph of the multiples of 3].

Ma3 Shape, space and measures

Using and applying shape, space and measures

1 Pupils should be taught to:

Problem solving

- a recognise the need for standard units of measurement
- b select and use appropriate calculation skills to solve geometrical problems
- c approach spatial problems flexibly, including trying alternative approaches to overcome difficulties
- d use checking procedures to confirm that their results of geometrical problems are reasonable

Communicating

- e organise work and record or represent it in a variety of ways when presenting solutions to geometrical problems
- f use geometrical notation and symbols correctly
- g present and interpret solutions to problems

Reasoning

- h use mathematical reasoning to explain features of shape and space.

Understanding properties of shape

2 Pupils should be taught to:

- a recognise right angles, perpendicular and parallel lines; know that angles are measured in degrees and that one whole turn is 360 degrees and angles at a point total 360 degrees, then recognise that angles at a point on a straight line total 180 degrees; know that the sum of the angles of a triangle is 180 degrees
- b visualise and describe 2-D and 3-D shapes and the way they behave, making more precise use of geometrical language, especially that of triangles, quadrilaterals, and prisms and pyramids of various kinds; recognise when shapes are identical
- c make and draw with increasing accuracy 2-D and 3-D shapes and patterns; recognise reflective symmetry in regular polygons; recognise their geometrical features and properties including angles, faces, pairs of parallel lines and symmetry, and use these to classify shapes and solve problems
- d visualise 3-D shapes from 2-D drawings.

Understanding properties of position and movement

3 Pupils should be taught to:

- a visualise and describe movements using appropriate language
- b transform objects in practical situations; transform images using ICT; visualise and predict the position of a shape following a rotation, reflection or translation

1c → ICT opportunity

Pupils could use software to create repeating patterns, such as tessellations.

1e, 1g → link to other subjects

These requirements build on En1/1a, 1c and En3/1a, 1e.

2c → ICT opportunity

Pupils could use object drawing software to plan alternative layouts for a room.

Note for 4a

In the international system of units, kilogram (kg) is the unit of mass. In practice, mass is measured by weighing; scales measure or compare a force (a push or a pull). Initially it is acceptable to treat weight as synonymous with mass but later in key stage 2 pupils will learn that the unit of weight (as type of force) is the newton.

- c identify and draw 2-D shapes in different orientations on grids; locate and draw shapes using coordinates in the first quadrant, then in all four quadrants [for example, use coordinates to locate position in a computer game].

Understanding measures

- 4 Pupils should be taught to:
 - a recognise the need for standard units of length, mass and capacity, choose which ones are suitable for a task, and use them to make sensible estimates in everyday situations; convert one metric unit to another [for example, convert 3.17kg to 3170g]; know the rough metric equivalents of imperial units still in daily use
 - b recognise that measurement is approximate; choose and use suitable measuring instruments for a task; interpret numbers and read scales with increasing accuracy; record measurements using decimal notation
 - c recognise angles as greater or less than a right angle or half-turn, estimate their size and order them; measure and draw acute, obtuse and right angles to the nearest degree
 - d read the time from analogue and digital 12- and 24-hour clocks; use units of time – seconds, minutes, hours, days, weeks – and know the relationship between them
 - e find perimeters of simple shapes; find areas of rectangles using the formula, understanding its connection to counting squares and how it extends this approach; calculate the perimeter and area of shapes composed of rectangles.

Ma4 Handling data

Using and applying handling data

1 Pupils should be taught to:

Problem solving

- a select and use handling data skills when solving problems in other areas of the curriculum, in particular science
- b approach problems flexibly, including trying alternative approaches to overcome any difficulties
- c identify the data necessary to solve a given problem
- d select and use appropriate calculation skills to solve problems involving data
- e check results and ensure that solutions are reasonable in the context of the problem

Communicating

- f decide how best to organise and present findings
- g use the precise mathematical language and vocabulary for handling data

Reasoning

- h explain and justify their methods and reasoning.

Processing, representing and interpreting data

2 Pupils should be taught to:

- a solve problems involving data
- b interpret tables, lists and charts used in everyday life; construct and interpret frequency tables, including tables for grouped discrete data
- c represent and interpret discrete data using graphs and diagrams, including pictograms, bar charts and line graphs, then interpret a wider range of graphs and diagrams, using ICT where appropriate
- d know that mode is a measure of average and that range is a measure of spread, and to use both ideas to describe data sets
- e recognise the difference between discrete and continuous data
- f draw conclusions from statistics and graphs and recognise when information is presented in a misleading way; explore doubt and certainty and develop an understanding of probability through classroom situations; discuss events using a vocabulary that includes the words 'equally likely', 'fair', 'unfair', 'certain'.

1f → links to other subjects

This requirement builds on En3/1a, 1e.

1g → links to other subjects

This requirement builds on En1/1a, 1c.

Breadth of study

- 1 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
 - a activities that extend their understanding of the number system to include integers, fractions and decimals
 - b approximating and estimating more systematically in their work in mathematics
 - c using patterns and relationships to explore simple algebraic ideas
 - d applying their measuring skills in a range of contexts
 - e drawing inferences from data in practical activities, and recognising the difference between meaningful and misleading representations of data
 - f exploring and using a variety of resources and materials, including ICT
 - g activities in which pupils decide when the use of calculators is appropriate and then use them effectively
 - h using mathematics in their work in other subjects.

Science does not tell us everything that we want to know about life, or all we need to know. But it does provide us with the most robust information about the way the universe works that has so far become available to us.

Colin Tudge, Science Writer

Science



Science is valuable because it meshes with all our lives and allows us to channel and use our spontaneous curiosity.

Professor Susan Greenfield, Director, Royal Institution

Studying science teaches us to be good at analysis and helps us to make complex things simple. It trains minds in a way that industry prizes.

Brendan O'Neill, Chief Executive, Imperial Chemical Industries PLC

The importance of science

Science stimulates and excites pupils' curiosity about phenomena and events in the world around them. It also satisfies this curiosity with knowledge. Because science links direct practical experience with ideas, it can engage learners at many levels. Scientific method is about developing and evaluating explanations through experimental evidence and modelling. This is a spur to critical

and creative thought. Through science, pupils understand how major scientific ideas contribute to technological change – impacting on industry, business and medicine and improving quality of life. Pupils recognise the cultural significance of science and trace its worldwide development. They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world.

Science is an integral part of modern culture. It stretches the imagination and creativity of young people. Its challenges are quite enormous.

Professor Malcolm Longair, Institute of Physics
Fellow in Public Understanding of Physics,
Head of Cavendish Laboratory, University
of Cambridge



Tom wears a reflective coat. The car lights shine on his coat and then you can see him in the dark.

Programme of study: science

Key stage 1

During key stage 1 pupils observe, explore and ask questions about living things, materials and phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables.

Note

The general teaching requirement for health and safety applies in this subject.

2 → links to other subjects

These requirements build on En1/10.

2b → links to other subjects

This requirement builds on En2/7a, 7b.

2f → links to other subjects

This requirement builds on Ma3/4a, 4c.

Note for 2f

In the international system of units, kilogram (kg) is the unit of mass. In practice, mass is measured by weighing; scales measure or compare a force (a push or a pull). At key stage 1 it is acceptable to treat weight as synonymous with mass. At key stage 2 pupils will learn that the unit of weight (a type of force) is the newton.

In science, the term volume is preferred to capacity. The preferred unit is cubic centimetres, but at key stage 1 the unit litre (= 1000 cubic centimetres) is acceptable.

2g → links to other subjects

This requirement builds on Ma2/5a, 5b and ICT/3.

2i, 2j → links to other subjects

These requirements build on En1/1c, 3c and En3/1d, 1e.

Knowledge, skills and understanding

Teaching should ensure that **scientific enquiry** is taught through contexts taken from the sections on **life processes and living things, materials and their properties and physical processes**.

Sc1 Scientific enquiry**Ideas and evidence in science**

- 1 Pupils should be taught that it is important to collect evidence by making observations and measurements when trying to answer a question.

Investigative skills

- 2 Pupils should be taught to:

Planning

- a ask questions [for example, 'How?', 'Why?', 'What will happen if ...?'] and decide how they might find answers to them
- b use first-hand experience and simple information sources to answer questions
- c think about what might happen before deciding what to do
- d recognise when a test or comparison is unfair

Obtaining and presenting evidence

- e follow simple instructions to control the risks to themselves and to others
- f explore, using the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements
- g communicate what happened in a variety of ways, including using ICT [for example, in speech and writing, by drawings, tables, block graphs and pictograms]

Considering evidence and evaluating

- h make simple comparisons [for example, hand span, shoe size] and identify simple patterns or associations
- i compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding
- j review their work and explain what they did to others.

Sc2 Life processes and living things

Life processes

- 1 Pupils should be taught:
 - a the differences between things that are living and things that have never been alive
 - b that animals, including humans, move, feed, grow, use their senses and reproduce
 - c to relate life processes to animals and plants found in the local environment.

Humans and other animals

- 2 Pupils should be taught:
 - a to recognise and compare the main external parts of the bodies of humans and other animals
 - b that humans and other animals need food and water to stay alive
 - c that taking exercise and eating the right types and amounts of food help humans to keep healthy
 - d about the role of drugs as medicines
 - e how to treat animals with care and sensitivity
 - f that humans and other animals can produce offspring and that these offspring grow into adults
 - g about the senses that enable humans and other animals to be aware of the world around them.

Green plants

- 3 Pupils should be taught:
 - a to recognise that plants need light and water to grow
 - b to recognise and name the leaf, flower, stem and root of flowering plants
 - c that seeds grow into flowering plants.

Variation and classification

- 4 Pupils should be taught to:
 - a recognise similarities and differences between themselves and others, and to treat others with sensitivity
 - b group living things according to observable similarities and differences.

Living things in their environment

- 5 Pupils should be taught to:
 - a find out about the different kinds of plants and animals in the local environment
 - b identify similarities and differences between local environments and ways in which these affect animals and plants that are found there
 - c care for the environment.

2a → ICT opportunity

Pupils could use multimedia sources to make comparisons.

4 → ICT opportunity

Pupils could use data collected to compile a class database.

1b → ICT opportunity

Pupils could use a software package to combine words and pictures about materials and objects.

Sc3 Materials and their properties

Grouping materials

- 1 Pupils should be taught to:
 - a use their senses to explore and recognise the similarities and differences between materials
 - b sort objects into groups on the basis of simple material properties [for example, roughness, hardness, shininess, ability to float, transparency and whether they are magnetic or non-magnetic]
 - c recognise and name common types of material [for example, metal, plastic, wood, paper, rock] and recognise that some of them are found naturally
 - d find out about the uses of a variety of materials [for example, glass, wood, wool] and how these are chosen for specific uses on the basis of their simple properties.

Changing materials

- 2 Pupils should be taught to:
 - a find out how the shapes of objects made from some materials can be changed by some processes, including squashing, bending, twisting and stretching
 - b explore and describe the way some everyday materials [for example, water, chocolate, bread, clay] change when they are heated or cooled.

Sc4 Physical processes

Electricity

- 1 Pupils should be taught:
 - a about everyday appliances that use electricity
 - b about simple series circuits involving batteries, wires, bulbs and other components [for example, buzzers, motors]
 - c how a switch can be used to break a circuit.

Forces and motion

- 2 Pupils should be taught:
 - a to find out about, and describe the movement of, familiar things [for example, cars going faster, slowing down, changing direction]
 - b that both pushes and pulls are examples of forces
 - c to recognise that when things speed up, slow down or change direction, there is a cause [for example, a push or a pull].

Light and sound

- 3 Pupils should be taught:
 - Light and dark**
 - a to identify different light sources, including the Sun
 - b that darkness is the absence of light
 - Making and detecting sounds**
 - c that there are many kinds of sound and sources of sound
 - d that sounds travel away from sources, getting fainter as they do so, and that they are heard when they enter the ear.

2a → links to other subjects

This requirement builds on Ma3/3a, 3b.

3c → ICT opportunity

Pupils could use sensors to detect and compare sounds.

2a → links to other subjects

This requirement builds on En1/1b, 8c, 10c and En3/9a, 9d.

Breadth of study

- 1 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
 - a a range of domestic and environmental contexts that are familiar and of interest to them
 - b looking at the part science has played in the development of many useful things
 - c using a range of sources of information and data, including ICT-based sources
 - d using first-hand and secondary data to carry out a range of scientific investigations, including complete investigations.
- 2 During the key stage, pupils should be taught to:
 - Communication**
 - a use simple scientific language to communicate ideas and to name and describe living things, materials, phenomena and processes
 - Health and safety**
 - b recognise that there are hazards in living things, materials and physical processes, and assess risks and take action to reduce risks to themselves and others.

Programme of study: science

Key stage 2

Knowledge, skills and understanding

Teaching should ensure that scientific enquiry is taught through contexts taken from the sections on life processes and living things, materials and their properties and physical processes.

Sc1 Scientific enquiry

Ideas and evidence in science

- 1 Pupils should be taught:
 - a that science is about thinking creatively to try to explain how living and non-living things work, and to establish links between causes and effects [for example, Jenner's vaccination work]
 - b that it is important to test ideas using evidence from observation and measurement.

Investigative skills

- 2 Pupils should be taught to:
 - Planning**
 - a ask questions that can be investigated scientifically and decide how to find answers
 - b consider what sources of information, including first-hand experience and a range of other sources, they will use to answer questions
 - c think about what might happen or try things out when deciding what to do, what kind of evidence to collect, and what equipment and materials to use
 - d make a fair test or comparison by changing one factor and observing or measuring the effect while keeping other factors the same

Obtaining and presenting evidence

- e use simple equipment and materials appropriately and take action to control risks
- f make systematic observations and measurements, including the use of ICT for datalogging
- g check observations and measurements by repeating them where appropriate
- h use a wide range of methods, including diagrams, drawings, tables, bar charts, line graphs and ICT, to communicate data in an appropriate and systematic manner

During key stage 2 pupils learn about a wider range of living things, materials and phenomena. They begin to make links between ideas and to explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They begin to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources in their work. They talk about their work and its significance, and communicate ideas using a wide range of scientific language, conventional diagrams, charts and graphs.

Note

The general teaching requirement for health and safety applies in this subject.

2 → links to other subjects

These requirements build on En1/10.

2b → links to other subjects

This requirement builds on En2/3.

2c, 2e, 2f → links to other subjects

These requirements build on Ma3/4a, 4b.

Note for 2c, 2e, 2f

In the international system of units, kilogram (kg) is the unit of mass. In practice mass is measured by weighing; scales measure or compare a force (a push or a pull). At key stage 2 pupils learn that the unit of weight (a type of force) is the newton.

In science the term volume is preferred to capacity. The preferred unit is cubic centimetres.

2f → links to other subjects

This requirement builds on ICT/2b.

2h → links to other subjects

This requirement builds on ICT/3.

2i, 2j → links to other subjects

These requirements build on Ma2/2i, 4a, 4d.

2i–2k → links to other subjects

These requirements build on Ma4/2.

Considering evidence and evaluating

- i make comparisons and identify simple patterns or associations in their own observations and measurements or other data
- j use observations, measurements or other data to draw conclusions
- k decide whether these conclusions agree with any prediction made and/or whether they enable further predictions to be made
- l use their scientific knowledge and understanding to explain observations, measurements or other data or conclusions
- m review their work and the work of others and describe its significance and limitations.

Sc2 Life processes and living things

Life processes

- 1 Pupils should be taught:
 - a that the life processes common to humans and other animals include nutrition, movement, growth and reproduction
 - b that the life processes common to plants include growth, nutrition and reproduction
 - c to make links between life processes in familiar animals and plants and the environments in which they are found.

Humans and other animals

- 2 Pupils should be taught:

Nutrition

- a about the functions and care of teeth
- b about the need for food for activity and growth, and about the importance of an adequate and varied diet for health

Circulation

- c that the heart acts as a pump to circulate the blood through vessels around the body, including through the lungs
- d about the effect of exercise and rest on pulse rate

Movement

- e that humans and some other animals have skeletons and muscles to support and protect their bodies and to help them to move

Growth and reproduction

- f about the main stages of the human life cycle

Health

- g about the effects on the human body of tobacco, alcohol and other drugs, and how these relate to their personal health
- h about the importance of exercise for good health.

Green plants

- 3 Pupils should be taught:

Growth and nutrition

- a the effect of light, air, water and temperature on plant growth
- b the role of the leaf in producing new material for growth
- c that the root anchors the plant, and that water and minerals are taken in through the root and transported through the stem to other parts of the plant

2b → ICT opportunity

Pupils could use a database or spreadsheet to analyse data about types of food in school lunches.

Note for 2c

Details of structure do not need to be taught.

2c, 2e, 2f → ICT opportunity

Pupils could use video or CD-ROM to see things that cannot be directly observed.

4a → ICT opportunity

Pupils could use a branching database to develop and use keys.

5b → ICT opportunity

Pupils could use video or CD-ROM to compare non-local habitats.

5f → ICT opportunity

Pupils could use simulation software to show changes in the populations of micro-organisms in different conditions.

Reproduction

- d about the parts of the flower [for example, stigma, stamen, petal, sepal] and their role in the life cycle of flowering plants, including pollination, seed formation, seed dispersal and germination.

Variation and classification

- 4 Pupils should be taught:
 - a to make and use keys
 - b how locally occurring animals and plants can be identified and assigned to groups
 - c that the variety of plants and animals makes it important to identify them and assign them to groups.

Living things in their environment

- 5 Pupils should be taught:
 - a about ways in which living things and the environment need protection

Adaptation

- b about the different plants and animals found in different habitats
- c how animals and plants in two different habitats are suited to their environment

Feeding relationships

- d to use food chains to show feeding relationships in a habitat
- e about how nearly all food chains start with a green plant

Micro-organisms

- f that micro-organisms are living organisms that are often too small to be seen, and that they may be beneficial [for example, in the breakdown of waste, in making bread] or harmful [for example, in causing disease, in causing food to go mouldy].

Sc3 Materials and their properties

Grouping and classifying materials

- 1 Pupils should be taught:
 - a to compare everyday materials and objects on the basis of their material properties, including hardness, strength, flexibility and magnetic behaviour, and to relate these properties to everyday uses of the materials
 - b that some materials are better thermal insulators than others
 - c that some materials are better electrical conductors than others
 - d to describe and group rocks and soils on the basis of their characteristics, including appearance, texture and permeability
 - e to recognise differences between solids, liquids and gases, in terms of ease of flow and maintenance of shape and volume.

Changing materials

- 2 Pupils should be taught:
 - a to describe changes that occur when materials are mixed [for example, adding salt to water]
 - b to describe changes that occur when materials [for example, water, clay, dough] are heated or cooled
 - c that temperature is a measure of how hot or cold things are
 - d about reversible changes, including dissolving, melting, boiling, condensing, freezing and evaporating
 - e the part played by evaporation and condensation in the water cycle
 - f that non-reversible changes [for example, vinegar reacting with bicarbonate of soda, plaster of Paris with water] result in the formation of new materials that may be useful
 - g that burning materials [for example, wood, wax, natural gas] results in the formation of new materials and that this change is not usually reversible.

Separating mixtures of materials

- 3 Pupils should be taught:
 - a how to separate solid particles of different sizes by sieving [for example, those in soil]
 - b that some solids [for example, salt, sugar] dissolve in water to give solutions but some [for example, sand, chalk] do not
 - c how to separate insoluble solids from liquids by filtering
 - d how to recover dissolved solids by evaporating the liquid from the solution
 - e to use knowledge of solids, liquids and gases to decide how mixtures might be separated.

Note for 1e

Particle theory does not need to be taught.

2b → ICT opportunity

Pupils could use sensors to record temperature changes.

2e → ICT opportunity

Pupils could use CD-ROM or the internet to research water supplies in a range of localities.

1a → ICT opportunity

Pupils could use simulation software to extend an investigation of components in a series circuit.

Note for 1b

Resistance does not need to be taught.

Note for 2b

Distinction between mass and weight need not be taught.

3f → ICT opportunity

Pupils could use sensors to detect and compare sounds made under different conditions.

Sc4 Physical processes**Electricity**

1 Pupils should be taught:

Simple circuits

- a to construct circuits, incorporating a battery or power supply and a range of switches, to make electrical devices work [for example, buzzers, motors]
- b how changing the number or type of components [for example, batteries, bulbs, wires] in a series circuit can make bulbs brighter or dimmer
- c how to represent series circuits by drawings and conventional symbols, and how to construct series circuits on the basis of drawings and diagrams using conventional symbols.

Forces and motion

2 Pupils should be taught:

Types of force

- a about the forces of attraction and repulsion between magnets, and about the forces of attraction between magnets and magnetic materials
- b that objects are pulled downwards because of the gravitational attraction between them and the Earth
- c about friction, including air resistance, as a force that slows moving objects and may prevent objects from starting to move
- d that when objects [for example, a spring, a table] are pushed or pulled, an opposing pull or push can be felt
- e how to measure forces and identify the direction in which they act.

Light and sound

3 Pupils should be taught:

Everyday effects of light

- a that light travels from a source
- b that light cannot pass through some materials, and how this leads to the formation of shadows
- c that light is reflected from surfaces [for example, mirrors, polished metals]

Seeing

- d that we see things only when light from them enters our eyes

Vibration and sound

- e that sounds are made when objects [for example, strings on musical instruments] vibrate but that vibrations are not always directly visible
- f how to change the pitch and loudness of sounds produced by some vibrating objects [for example, a drum skin, a plucked string]
- g that vibrations from sound sources require a medium [for example, metal, wood, glass, air] through which to travel to the ear.

The Earth and beyond

4 Pupils should be taught:

The Sun, Earth and Moon

- a that the Sun, Earth and Moon are approximately spherical

Periodic changes

- b how the position of the Sun appears to change during the day, and how shadows change as this happens
 c how day and night are related to the spin of the Earth on its own axis
 d that the Earth orbits the Sun once each year, and that the Moon takes approximately 28 days to orbit the Earth.

4b–4d → ICT opportunity

Pupils could use video or CD-ROM to study models of the Sun, Earth and Moon system.

2a → links to other subjects

This requirement builds on En1/10a–10c and En3/9b–9d and Ma3/1a.

Breadth of study

1 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:

- a a range of domestic and environmental contexts that are familiar and of interest to them
 b looking at the part science has played in the development of many useful things
 c using a range of sources of information and data, including ICT-based sources
 d using first-hand and secondary data to carry out a range of scientific investigations, including complete investigations.

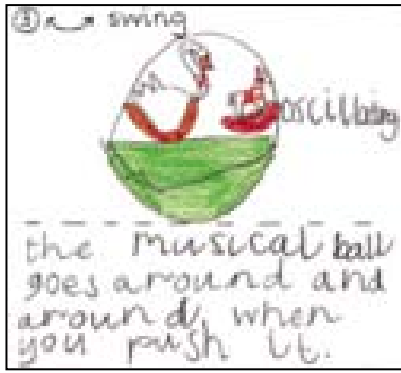
2 During the key stage, pupils should be taught to:

Communication

- a use appropriate scientific language and terms, including SI units of measurement [for example, metre, newton], to communicate ideas and explain the behaviour of living things, materials, phenomena and processes

Health and safety

- b recognise that there are hazards in living things, materials and physical processes, and assess risks and take action to reduce risks to themselves and others.



The importance of design and technology

Design and technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by

developing a range of ideas and making products and systems. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past design and technology, its uses and effects. Through design and technology, all pupils can become discriminating and informed users of products, and become innovators.

Design and technology

The design of an object defines its meaning and ultimately its utility. The nature of the connection between technology and people is determined by the designer.

Jonathan Ive, Apple Computer

An understanding of the technical possibilities available, together with an interest in and sensitivity to use of language, gives you the confidence to express your design ideas.

Freda Sack, Type Designer and Typographer, The Foundry

'Tell me and I forget – show me and I may remember – let me do it, and I learn.' Learning through making works!

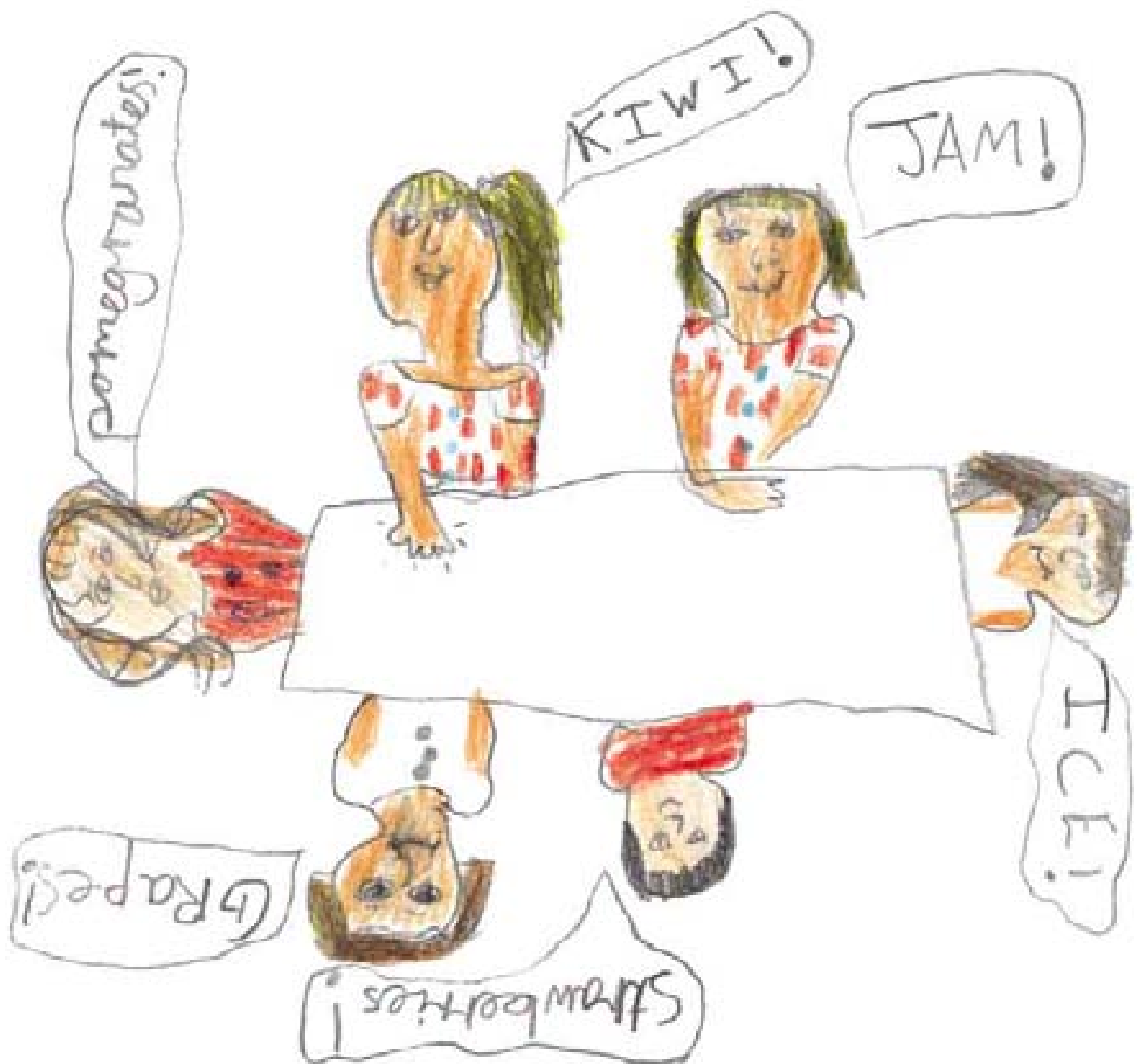
Prue Leith, Leith's School of Food and Wine

Design and technology is about making things that people want and that work well. Creating these things is hugely exciting: it is an inventive, fun activity.

James Dyson, Chairman, Dyson Ltd

Our healthy fruit salad drink.

We talked together, and decided what we would like in it.....



Programme of study: design and technology

Key stage 1

During key stage 1 pupils learn how to think imaginatively and talk about what they like and dislike when designing and making. They build on their early childhood experiences of investigating objects around them. They explore how familiar things work and talk about, draw and model their ideas. They learn how to design and make safely and could start to use ICT as part of their designing and making.

Note

The general teaching requirement for health and safety applies in this subject.

1a, 1e → ICT opportunity

Pupils could use word-processing or desktop publishing (DTP) software and a printer to plan and display their ideas.

1c, 3a → links to other subjects

These requirements build on En1/1, 3.

2a → links to other subjects

This requirement builds on Sc3/1a, 1c, 1d and A&D/2a, 2b.

2c → links to other subjects

This requirement builds on Ma3/4a–4c.

2e → ICT opportunity

Pupils could use 'paint' software and a colour printer to produce a pattern for finishing a product.

4b → links to other subjects

This requirement builds on Sc4/2a.

Knowledge, skills and understanding

Teaching should ensure that **knowledge and understanding** are applied when **developing ideas, planning, making products and evaluating them**.

Developing, planning and communicating ideas

- 1 Pupils should be taught to:
 - a generate ideas by drawing on their own and other people's experiences
 - b develop ideas by shaping materials and putting together components
 - c talk about their ideas
 - d plan by suggesting what to do next as their ideas develop
 - e communicate their ideas using a variety of methods, including drawing and making models.

Working with tools, equipment, materials and components to make quality products

- 2 Pupils should be taught to:
 - a select tools, techniques and materials for making their product from a range suggested by the teacher
 - b explore the sensory qualities of materials
 - c measure, mark out, cut and shape a range of materials
 - d assemble, join and combine materials and components
 - e use simple finishing techniques to improve the appearance of their product, using a range of equipment
 - f follow safe procedures for food safety and hygiene.

Evaluating processes and products

- 3 Pupils should be taught to:
 - a talk about their ideas, saying what they like and dislike
 - b identify what they could have done differently or how they could improve their work in the future.

Knowledge and understanding of materials and components

- 4 Pupils should be taught:
 - a about the working characteristics of materials [for example, folding paper to make it stiffer, plaiting yarn to make it stronger]
 - b how mechanisms can be used in different ways [for example, wheels and axles, joints that allow movement].

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
- a investigating and evaluating a range of familiar products [for example, talking about how they work, and whether they do what they are supposed to do]
 - b focused practical tasks that develop a range of techniques, skills, processes and knowledge
 - c design and make assignments using a range of materials, including food, items that can be put together to make products, and textiles.

Programme of study: design and technology

Key stage 2

During key stage 2 pupils work on their own and as part of a team on a range of designing and making activities. They think about what products are used for and the needs of the people who use them. They plan what has to be done and identify what works well and what could be improved in their own and other people's designs. They draw on knowledge and understanding from other areas of the curriculum and use computers in a range of ways.

Note

The general teaching requirement for health and safety applies in this subject.

1a → links to other subjects

This requirement builds on En2/3a–3e and ICT/1a.

1b–1d → ICT opportunity

Pupils could use desktop publishing (DTP) software and a colour printer to develop and communicate their design ideas.

2c → links to other subjects

This requirement builds on Sc3/1a and A&D/2a.

2d → links to other subjects

This requirement builds on Ma3/4a–4c.

Knowledge, skills and understanding

Teaching should ensure that **knowledge and understanding** are applied when **developing ideas, planning, making products and evaluating them**.

Developing, planning and communicating ideas

- 1 Pupils should be taught to:
 - a generate ideas for products after thinking about who will use them and what they will be used for, using information from a number of sources, including ICT-based sources
 - b develop ideas and explain them clearly, putting together a list of what they want their design to achieve
 - c plan what they have to do, suggesting a sequence of actions and alternatives, if needed
 - d communicate design ideas in different ways as these develop, bearing in mind aesthetic qualities, and the uses and purposes for which the product is intended.

Working with tools, equipment, materials and components to make quality products

- 2 Pupils should be taught to:
 - a select appropriate tools and techniques for making their product
 - b suggest alternative ways of making their product, if first attempts fail
 - c explore the sensory qualities of materials and how to use materials and processes
 - d measure, mark out, cut and shape a range of materials, and assemble, join and combine components and materials accurately
 - e use finishing techniques to strengthen and improve the appearance of their product, using a range of equipment including ICT [for example, 'drawing' software or computer-aided design (CAD) software and a printer]
 - f follow safe procedures for food safety and hygiene.

Evaluating processes and products

- 3 Pupils should be taught to:
 - a reflect on the progress of their work as they design and make, identifying ways they could improve their products
 - b carry out appropriate tests before making any improvements
 - c recognise that the quality of a product depends on how well it is made and how well it meets its intended purpose [for example, how well products meet social, economic and environmental considerations].

Knowledge and understanding of materials and components

- 4 Pupils should be taught:
- a how the working characteristics of materials affect the ways they are used
 - b how materials can be combined and mixed to create more useful properties [for example, using cardboard triangles on the corners of a wooden framework to strengthen it]
 - c how mechanisms can be used to make things move in different ways, using a range of equipment including an ICT control program
 - d how electrical circuits, including those with simple switches, can be used to achieve results that work.

4c → links to other subjects

This requirement builds on Sc4/2c, 2d and ICT/2b.

4d → links to other subjects

This requirement builds on Sc4/1.

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
- a investigating and evaluating a range of familiar products, thinking about how they work, how they are used and the views of the people who use them
 - b focused practical tasks that develop a range of techniques, skills, processes and knowledge
 - c design and make assignments using a range of materials, including electrical and mechanical components, food, mouldable materials, stiff and flexible sheet materials, and textiles.



The importance of information and communication technology

Information and communication technology (ICT) prepares pupils to participate in a rapidly changing world in which work and other activities are increasingly transformed by access to varied and developing technology. Pupils use ICT tools to find, explore, analyse, exchange and present information responsibly, creatively and with

discrimination. They learn how to employ ICT to enable rapid access to ideas and experiences from a wide range of people, communities and cultures. Increased capability in the use of ICT promotes initiative and independent learning, with pupils being able to make informed judgements about when and where to use ICT to best effect, and to consider its implications for home and work both now and in the future.

ICT has enormous potential not just for a National Curriculum. It will change the way we learn as well as the way we work.

Chris Yapp, ICL Fellow for Lifelong Learning

The modern world requires new skills. Understanding ICT and, more importantly, being able to apply it to the problems we face is one of the most important. Increasingly ICT will be vital for our individual prospects and for our economy's future.

Lord Dennis Stevenson, Prime Minister's Adviser on ICT and Education

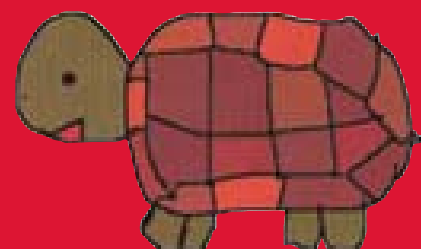
ICT expands horizons by shrinking worlds.

David Brown, Chairman, Motorola Ltd

With scientific method, we took things apart to see how they work. Now with computers we can put things back together to see how they work, by modelling complex, interrelated processes, even life itself. This is a new age of discovery, and ICT is the gateway.

Douglas Adams, Author

Information and communication technology



Programme of study: information and communication technology

Key stage 1

During key stage 1 pupils explore ICT and learn to use it confidently and with purpose to achieve specific outcomes. They start to use ICT to develop their ideas and record their creative work. They become familiar with hardware and software.

Note

The general teaching requirement for health and safety applies in this subject.

1a → links to other subjects

This requirement builds on En2/2a–2c.

2a → links to other subjects

This requirement builds on Ma2/5a.

Knowledge, skills and understanding

Finding things out

- 1 Pupils should be taught how to:
 - a gather information from a variety of sources [for example, people, books, databases, CD-ROMs, videos and TV]
 - b enter and store information in a variety of forms [for example, storing information in a prepared database, saving work]
 - c retrieve information that has been stored [for example, using a CD-ROM, loading saved work].

Developing ideas and making things happen

- 2 Pupils should be taught:
 - a to use text, tables, images and sound to develop their ideas
 - b how to select from and add to information they have retrieved for particular purposes
 - c how to plan and give instructions to make things happen [for example, programming a floor turtle, placing instructions in the right order]
 - d to try things out and explore what happens in real and imaginary situations [for example, trying out different colours on an image, using an adventure game or simulation].

Exchanging and sharing information

- 3 Pupils should be taught:
 - a how to share their ideas by presenting information in a variety of forms [for example, text, images, tables, sounds]
 - b to present their completed work effectively [for example, for public display].

Reviewing, modifying and evaluating work as it progresses

- 4 Pupils should be taught to:
 - a review what they have done to help them develop their ideas
 - b describe the effects of their actions
 - c talk about what they might change in future work.

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
 - a working with a range of information to investigate the different ways it can be presented [for example, information about the Sun presented as a poem, picture or sound pattern]
 - b exploring a variety of ICT tools [for example, floor turtle, word processing software, adventure game]
 - c talking about the uses of ICT inside and outside school.

Key stage 2

During key stage 2 pupils use a wider range of ICT tools and information sources to support their work in other subjects. They develop their research skills and decide what information is appropriate for their work. They begin to question the plausibility and quality of information. They learn how to amend their work and present it in a way that suits its audience.

Note

The general teaching requirement for health and safety applies in this subject.

1a → links to other subjects

This requirement builds on En2/3.

2a → links to other subjects

This requirement builds on En3/2.

2c → links to other subjects

This requirement builds on Ma2/4d.

Knowledge, skills and understanding

Finding things out

- 1 Pupils should be taught:
 - a to talk about what information they need and how they can find and use it [for example, searching the internet or a CD-ROM, using printed material, asking people]
 - b how to prepare information for development using ICT, including selecting suitable sources, finding information, classifying it and checking it for accuracy [for example, finding information from books or newspapers, creating a class database, classifying by characteristics and purposes, checking the spelling of names is consistent]
 - c to interpret information, to check it is relevant and reasonable and to think about what might happen if there were any errors or omissions.

Developing ideas and making things happen

- 2 Pupils should be taught:
 - a how to develop and refine ideas by bringing together, organising and reorganising text, tables, images and sound as appropriate [for example, desktop publishing, multimedia presentations]
 - b how to create, test, improve and refine sequences of instructions to make things happen and to monitor events and respond to them [for example, monitoring changes in temperature, detecting light levels and turning on a light]
 - c to use simulations and explore models in order to answer 'What if ... ?' questions, to investigate and evaluate the effect of changing values and to identify patterns and relationships [for example, simulation software, spreadsheet models].

Exchanging and sharing information

- 3 Pupils should be taught:
 - a how to share and exchange information in a variety of forms, including e-mail [for example, displays, posters, animations, musical compositions]
 - b to be sensitive to the needs of the audience and think carefully about the content and quality when communicating information [for example, work for presentation to other pupils, writing for parents, publishing on the internet].

Reviewing, modifying and evaluating work as it progresses

- 4 Pupils should be taught to:
 - a review what they and others have done to help them develop their ideas
 - b describe and talk about the effectiveness of their work with ICT, comparing it with other methods and considering the effect it has on others [for example, the impact made by a desktop-published newsletter or poster]
 - c talk about how they could improve future work.

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
 - a working with a range of information to consider its characteristics and purposes [for example, collecting factual data from the internet and a class survey to compare the findings]
 - b working with others to explore a variety of information sources and ICT tools [for example, searching the internet for information about a different part of the world, designing textile patterns using graphics software, using ICT tools to capture and change sounds]
 - c investigating and comparing the uses of ICT inside and outside school.

Dear Ma and Pa

The train journey was awful. The air raid siren went off and none of us knew where the nearest shelter was. Winifred cried, that little baby!

We were taken to the village hall. Winifred looked awful, she had dirty hands and face and she was still crying. Lots of people wanted to take me away but I could not go without Winifred and no-one wanted her. We were the last children except for another boy who looked even worse than Winifred!

In the end an old lady came in and had a look at us. I prayed that she would take the boy. She was a small fat lady with a knobby walking stick. She took us - just my luck!

Her name is Mrs. Stick. Mrs. Stick is very strict on manners and notions. She puts up the blackout at three o'clock when it is still total daylight. I hope this letter will not upset you too much Ma,

Miss you and Pa

Lots of love Marion.





The importance of history

History fires pupils' curiosity about the past in Britain and the wider world. Pupils consider how the past influences the present, what past societies were like, how these societies organised their politics, and what beliefs and cultures influenced people's actions. As they do this, pupils develop a chronological framework for their knowledge of significant events and people. They see the diversity of human experience, and understand more about themselves as individuals and members of society. What they learn can influence their decisions about personal choices, attitudes and values. In history, pupils find evidence, weigh it up and reach their own conclusions. To do this they need to be able to research, sift through evidence, and argue for their point of view – skills that are prized in adult life.



History

History is made by people. When you understand people, you can live a full life.

Charles Miller Smith, Chairman, Imperial Chemical Industries PLC

History adds colour to the curriculum. It tells you about how the princes and the people fit together – or fight. That's life itself. If you miss out on that, you miss out on some of the most exotic, colourful characters you'll have the chance to learn about at school.

Brian Walden, Author and Television Presenter

History is an unusual discipline. Its core is hard fact that you cannot get away from and have to learn to master. At the same time you have to be deductive, perceptive and imaginative in the use of that fact.

Dr Christine Carpenter, University of Cambridge

How do you know who you are unless you know where you've come from? How can you tell what's going to happen, unless you know what's happened before? History isn't just about the past. It's about why we are who we are – and about what's next.

Tony Robinson, Actor and Television Presenter

Programme of study: history

Key stage 1

During key stage 1 pupils learn about people's lives and lifestyles. They find out about significant men, women, children and events from the recent and more distant past, including those from both Britain and the wider world. They listen and respond to stories and use sources of information to help them ask and answer questions. They learn how the past is different from the present.

1a → links to other subjects

This requirement builds on Ma3/4a.

Note for 3

Different ways in which people have represented the past include: in pictures, plays, films, reconstructions of the past, museum displays, TV programmes and fictional stories.

4a → links to other subjects

This requirement builds on En1/2 and En2/2.

4a → ICT opportunity

Pupils could use information from a CD-ROM to find out about the life of a significant person, or the way of life in the past.

5 → links to other subjects

This requirement builds on En1/1, 4a and En3/1, 2.

5 → ICT opportunity

Pupils could order important events in a story on an on-screen timeline.

Knowledge, skills and understanding

Chronological understanding

- 1 Pupils should be taught to:
 - a place events and objects in chronological order
 - b use common words and phrases relating to the passing of time [for example, before, after, a long time ago, past].

Knowledge and understanding of events, people and changes in the past

- 2 Pupils should be taught to:
 - a recognise why people did things, why events happened and what happened as a result
 - b identify differences between ways of life at different times.

Historical interpretation

- 3 Pupils should be taught to identify different ways in which the past is represented.

Historical enquiry

- 4 Pupils should be taught:
 - a how to find out about the past from a range of sources of information [for example, stories, eye-witness accounts, pictures and photographs, artefacts, historic buildings and visits to museums, galleries and sites, the use of ICT-based sources]
 - b to ask and answer questions about the past.

Organisation and communication

- 5 Pupils should be taught to select from their knowledge of history and communicate it in a variety of ways [for example, talking, writing, using ICT].

Breadth of study

- 6 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the following areas of study:
 - a changes in their own lives and the way of life of their family or others around them
 - b the way of life of people in the more distant past who lived in the local area or elsewhere in Britain
 - c the lives of significant men, women and children drawn from the history of Britain and the wider world [for example, artists, engineers, explorers, inventors, pioneers, rulers, saints, scientists]
 - d past events from the history of Britain and the wider world [for example, events such as the Gunpowder Plot, the Olympic Games, other events that are commemorated].

Programme of study: history

Key stage 2

Knowledge, skills and understanding

Chronological understanding

- 1 Pupils should be taught to:
 - a place events, people and changes into correct periods of time
 - b use dates and vocabulary relating to the passing of time, including ancient, modern, BC, AD, century and decade.

Knowledge and understanding of events, people and changes in the past

- 2 Pupils should be taught:
 - a about characteristic features of the periods and societies studied, including the ideas, beliefs, attitudes and experiences of men, women and children in the past
 - b about the social, cultural, religious and ethnic diversity of the societies studied, in Britain and the wider world
 - c to identify and describe reasons for, and results of, historical events, situations, and changes in the periods studied
 - d to describe and make links between the main events, situations and changes within and across the different periods and societies studied.

Historical interpretation

- 3 Pupils should be taught to recognise that the past is represented and interpreted in different ways, and to give reasons for this.

Historical enquiry

- 4 Pupils should be taught:
 - a how to find out about the events, people and changes studied from an appropriate range of sources of information, including ICT-based sources [for example, documents, printed sources, CD-ROMS, databases, pictures and photographs, music, artefacts, historic buildings and visits to museums, galleries and sites]
 - b to ask and answer questions, and to select and record information relevant to the focus of the enquiry.

Organisation and communication

- 5 Pupils should be taught to:
 - a recall, select and organise historical information
 - b use dates and historical vocabulary to describe the periods studied
 - c communicate their knowledge and understanding of history in a variety of ways [for example, drawing, writing, by using ICT].

During key stage 2 pupils learn about significant people, events and places from both the recent and more distant past. They learn about change and continuity in their own area, in Britain and in other parts of the world. They look at history in a variety of ways, for example from political, economic, technological and scientific, social, religious, cultural or aesthetic perspectives. They use different sources of information to help them investigate the past both in depth and in overview, using dates and historical vocabulary to describe events, people and developments. They also learn that the past can be represented and interpreted in different ways.

Note for 3

People represent and interpret the past in many different ways, including: in pictures, plays, films, reconstructions, museum displays, and fictional and non-fiction accounts. Interpretations reflect the circumstances in which they are made, the available evidence, and the intentions of those who make them (for example, writers, archaeologists, historians, film-makers).

4a → links to other subjects

This requirement builds on En1/2 and En2/1d, 2, 3 and ICT/1a, 1c, 2a.

4b → ICT opportunity

Pupils could use a census database to search for information and identify and explain patterns of change.

5c → links to other subjects

This requirement builds on En1/1, 3, 4a and En3/1, 2.

5c → ICT opportunity

Pupils could use digitised maps to identify and colour-code features important to local study.

Note for Breadth of study

Not all of the aspects of the **Knowledge, skills and understanding** need be developed in each study.

Note for 7

The local history study could be a discrete study in any period of the history of Britain, or it could be related to one of the specified British studies.

Note for 9

An overview study could consider significant themes across the period, for example, government and religion, patterns of settlement, farming, social structure, trade and everyday life. An in-depth study could consider in detail the effects of the arrival and settlement by one particular group of peoples – for example, the Vikings – and include, where appropriate, significant events and the role of individuals.

Breadth of study

- 6 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through a local history study, three British history studies, a European history study and a world history study.

Local history study

- 7 A study investigating how an aspect in the local area has changed over a long period of time, *or* how the locality was affected by a significant national *or* local event *or* development *or* by the work of a significant individual.

British history

- 8 In their study of British history, pupils should be taught about:
- the Romans, Anglo-Saxons and Vikings; Britain and the wider world in Tudor times; and *either* Victorian Britain *or* Britain since 1930
 - aspects of the histories of England, Ireland, Scotland and Wales, where appropriate, and about the history of Britain in its European and wider world context, in these periods.

Romans, Anglo-Saxons and Vikings in Britain

- 9 An overview study of how British society was shaped by the movement and settlement of different peoples in the period before the Norman Conquest and an in-depth study of how British society was affected by Roman *or* Anglo-Saxon *or* Viking settlement.

Britain and the wider world in Tudor times

- 10 A study of some significant events and individuals, including Tudor monarchs, who shaped this period and of the everyday lives of men, women and children from different sections of society.

Victorian Britain or Britain since 1930

- 11 Teachers can choose between a study of Victorian Britain *or* Britain since 1930.

Victorian Britain

- A study of the impact of significant individuals, events and changes in work and transport on the lives of men, women and children from different sections of society.

Britain since 1930

- A study of the impact of the Second World War *or* social and technological changes that have taken place since 1930, on the lives of men, women and children from different sections of society.

A European history study

- 12 A study of the way of life, beliefs and achievements of the people living in Ancient Greece and the influence of their civilisation on the world today.

A world history study

13 A study of the key features, including the everyday lives of men, women and children, of a past society *selected from*: Ancient Egypt, Ancient Sumer, the Assyrian Empire, the Indus Valley, the Maya, Benin, or the Aztecs.

Examples for 7: the local history study

Aspects in the local area that have changed: education; population movement; houses and housing; religious practices; treatment of the poor and care of the sick; law and order; sport and leisure.

Effects of national events or developments: prehistoric settlers; the building of a castle or the development of a town; the Civil War; the plague or a cholera epidemic; the settlement of people from different cultures in the area.

Examples for 9: Romans, Anglo-Saxons and Vikings in Britain

Effects of Roman settlement: the Roman Conquest and occupation of Britain; Boudicca, Caratacus and resistance to Roman rule; the building of Hadrian's Wall, roads, villas and towns by the Romans; Roman settlement in the local area.

Effects of Anglo-Saxon settlement: the arrival and settlement of the Anglo-Saxons; the conversion to Christianity, the lives of monks and nuns, for example Bede and Hilda; religious beliefs and customs, including the Sutton Hoo and other ship burials, and myths and legends; Anglo-Saxon settlement in the local area.

Effects of Viking settlement: Viking raids and settlement; King Alfred and Anglo-Saxon resistance to the Vikings; King Cnut and the Danes; Jorvik and other Viking settlements; heroic poems and sagas; Viking settlement in the local area.

Examples for 10: Britain and the wider world in Tudor times

Significant individuals and events: Henry VIII, Thomas More and the break with Rome; Francis Drake and the Armada; the reign of Elizabeth and the roles played by Mary Queen of Scots and the Earl of Essex; John and Sebastian Cabot, Walter Raleigh and exploration; William Shakespeare and the Elizabethan Theatre.

Everyday life: life for the rich and poor; differences between town and country life; education; ships and seafaring, merchants, traders and settlers; trade with Africa, Asia and America; food and entertainment; medicine and health; Tudor buildings in the local area; the impact of the closing down of a religious community on the local area.

Examples for 11a: Victorian Britain

Impact of significant individuals and events: Lord Shaftesbury and the welfare of children; Robert Owen, Elizabeth Fry and improving the lives of ordinary people; Queen Victoria, Prince Albert and the Great Exhibition; Florence Nightingale, Mary Seacole and the Crimean War; Robert Stephenson, Isambard Kingdom Brunel and their impact on travel in Britain and to the wider world; David Livingstone, Mary Kingsley and world exploration; Alexander Graham Bell and the telephone.

Impact of changes to work and transport: the factory system and working life for men, women and children; education in factories and schools; the growth of industrial towns; service in the army, royal navy and merchant navy; ships and seafaring; rail travel, seaside holidays and entertainment; the impact of the railways on the local area; the impact of the building of factories on the local area.

Examples for 11b: Britain since 1930

Impact of the Second World War: the Blitz and evacuation; rationing; serving in the land army or the home guard; new technologies such as code breaking; the Second World War in the local area.

Impact of social and technological changes: the depression; the introduction of the National Health Service; the Festival of Britain; immigration and emigration; living in new towns; fairer working and living conditions for all; impact of domestic appliances in the home; radio, cinema, television and John Logie Baird; car manufacture and Alec Issigonis; developments in aviation by people such as Amy Johnson and Frank Whittle; new technologies; space travel.

Examples for 12: a European study of Ancient Greece

Aspects of the way of life: arts and architecture; houses, cities and public buildings; citizens and slaves; education for girls and boys; language; medicine, health and hygiene; games and leisure including the Olympic Games; plays and the theatre; ships and trading; soldiers and warfare.

Beliefs and achievements: the city states of Athens and Sparta; gods and goddesses, myths, legends, beliefs and customs; Pheidippides and the battle of Marathon; Pericles and the building of the Parthenon; the conquests of Philip of Macedon and Alexander the Great; great scholars and discoverers.

Examples for 13: a world study of a past society

Key features: the society in relation to other contemporary societies; chronology; the reasons for the rise and fall of the civilisation; significant places and individuals; distinctive contribution to history.

Aspects of everyday life: houses and cities; arts and architecture; technology, work and leisure; food, health and medicine; pictures, words and communication; rulers and ruled; beliefs, customs and legends, gods and goddesses; temples and tombs; wealth and economy; transport and exploration; wars and warfare.

The importance of geography

Geography provokes and answers questions about the natural and human worlds, using different scales of enquiry to view them from different perspectives. It develops knowledge of places and environments throughout the world, an understanding of maps, and a range of investigative and problem-solving skills both inside and outside the classroom. As such, it prepares pupils for adult life and employment. Geography is a focus within

the curriculum for understanding and resolving issues about the environment and sustainable development. It is also an important link between the natural and social sciences. As pupils study geography, they encounter different societies and cultures. This helps them realise how nations rely on each other. It can inspire them to think about their own place in the world, their values, and their rights and responsibilities to other people and the environment.

Geography

Geography brings theory down to earth. And in a world where 80 per cent of information is referenced to locations, it develops spatial awareness.

Dr Rita Gardner, Director and Secretary, Royal Geographical Society
(with the Institute of British Geographers)

What is our knowledge worth if we know nothing about the world that sustains us, nothing about natural systems and climate, nothing about other countries and cultures?

Jonathon Porritt, Forum for the Future

What other subject tells us so much about the great issues of the age – global change, natural and human?

Professor Andrew Goudie, University of Oxford

Geography makes us aware that we must think globally.

Bill Giles OBE, Head, BBC Weather

Programme of study: geography

Key stage 1

During key stage 1 pupils investigate their local area and a contrasting area in the United Kingdom or abroad, finding out about the environment in both areas and the people who live there. They also begin to learn about the wider world. They carry out geographical enquiry inside and outside the classroom. In doing this they ask geographical questions about people, places and environments, and use geographical skills and resources such as maps and photographs.

1b → links to other subjects

This requirement builds on Ma2/5a.

1d → links to other subjects

This requirement builds on En1/1b–1f and En3/1a, 1c–1f and Ma2/1f and Ma2/1e, 1g.

Note for 2

Geographical skills are developed in the context of geographical enquiry.

Note for 2b

Fieldwork skills are developed during fieldwork investigations outside the classroom.

2c → ICT opportunity

Pupils could use a programmable toy to develop instructions for following a route.

2c, 2e → links to other subjects

These requirements build on Ma3/3a, 3b.

2d → links to other subjects

This requirement builds on En2/2 and ICT/1a.

Note for 3b

This begins to develop pupils' framework of locational knowledge.

Note for 3e

This provides a basis for pupils' understanding of global citizenship in later key stages.

Knowledge, skills and understanding

Teaching should ensure that geographical enquiry and skills are used when developing knowledge and understanding of places, patterns and processes, and environmental change and sustainable development.

Geographical enquiry and skills

- 1 In undertaking geographical enquiry, pupils should be taught to:
 - a ask geographical questions [for example, 'What is it like to live in this place?']
 - b observe and record [for example, identify buildings in the street and complete a chart]
 - c express their own views about people, places and environments [for example, about litter in the school]
 - d communicate in different ways [for example, in pictures, speech, writing].
- 2 In developing geographical skills, pupils should be taught to:
 - a use geographical vocabulary [for example, hill, river, motorway, near, far, north, south]
 - b use fieldwork skills [for example, recording information on a school plan or local area map]
 - c use globes, maps and plans at a range of scales [for example, following a route on a map]
 - d use secondary sources of information [for example, CD-ROMs, pictures, photographs, stories, information texts, videos, artefacts]
 - e make maps and plans [for example, a pictorial map of a place in a story].

Knowledge and understanding of places

- 3 Pupils should be taught to:
 - a identify and describe what places are like [for example, in terms of landscape, jobs, weather]
 - b identify and describe where places are [for example, position on a map, whether they are on a river]
 - c recognise how places have become the way they are and how they are changing [for example, the quality of the environment in a street]
 - d recognise how places compare with other places [for example, compare the local area with places elsewhere in the United Kingdom]
 - e recognise how places are linked to other places in the world [for example, food from other countries].

Knowledge and understanding of patterns and processes

- 4 Pupils should be taught to:
- a make observations about where things are located [for example, a pedestrian crossing near school gates] and about other features in the environment [for example, seasonal changes in weather]
 - b recognise changes in physical and human features [for example, heavy rain flooding fields].

Knowledge and understanding of environmental change and sustainable development

- 5 Pupils should be taught to:
- a recognise changes in the environment [for example, traffic pollution in a street]
 - b recognise how the environment may be improved and sustained [for example, by restricting the number of cars].

Breadth of study

- 6 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the study of two localities:
- a the locality of the school
 - b a locality *either* in the United Kingdom *or* overseas that has physical and/or human features that contrast with those in the locality of the school.
- 7 In their study of localities, pupils should:
- a study at a local scale
 - b carry out fieldwork investigations outside the classroom.

Note for 4

'Pattern' refers to the way in which physical and human features occur or are arranged (for example, weather changes, street layout). 'Process' refers to a series of events that cause changes in a place or environment (for example, flooding, increasing traffic).

4a → ICT opportunity

Pupils could use a digital camera to record places, people and events observed outside the classroom.

Note for 6

The 'locality' of the school is its immediate vicinity, including school buildings and grounds and the surrounding area within easy access. The contrasting locality should be an area of similar size.

6b → ICT opportunity

Pupils could use CD-ROMs or the internet to investigate a contrasting locality.

Note for 7a

'Scale' refers to the geographical extent of a study. A local-scale study is a study of a small area (for example, a neighbourhood, village or small town).

Programme of study: geography

Key stage 2

During key stage 2 pupils investigate a variety of people, places and environments at different scales in the United Kingdom and abroad, and start to make links between different places in the world. They find out how people affect the environment and how they are affected by it. They carry out geographical enquiry inside and outside the classroom. In doing this they ask geographical questions, and use geographical skills and resources such as maps, atlases, aerial photographs and ICT.

1b → links to other subjects

This requirement builds on Ma4/1a–1c, 2b, 2c.

1c → links to other subjects

This requirement builds on Ma4/2b, 2c, 2f.

1e → links to other subjects

This requirement builds on En1/1a–1d and En3/1 and ICT/3a, 3b.

Note for 2

Geographical skills are developed in the context of geographical enquiry.

Note for 2b

Fieldwork techniques are developed during fieldwork investigations outside the classroom.

2c, 2e → links to other subjects

These requirements build on Ma3/2c, 2d, 3c, 4b.

2d → links to other subjects

This requirement builds on En2/3, 5a, 5b, 5g.

2d → ICT opportunity

Pupils could use a database to sort, question and present information about different countries.

Knowledge, skills and understanding

Teaching should ensure that **geographical enquiry and skills** are used when developing **knowledge and understanding of places, patterns and processes**, and **environmental change and sustainable development**.

Geographical enquiry and skills

- 1 In undertaking geographical enquiry, pupils should be taught to:
 - a ask geographical questions [for example, ‘What is this landscape like?’, ‘What do I think about it?’]
 - b collect and record evidence [for example, by carrying out a survey of shop functions and showing them on a graph]
 - c analyse evidence and draw conclusions [for example, by comparing population data for two localities]
 - d identify and explain different views that people, including themselves, hold about topical geographical issues [for example, views about plans to build an hotel in an overseas locality]
 - e communicate in ways appropriate to the task and audience [for example, by writing to a newspaper about a local issue, using e-mail to exchange information about the locality with another school].

- 2 In developing geographical skills, pupils should be taught:
 - a to use appropriate geographical vocabulary [for example, temperature, transport, industry]
 - b to use appropriate fieldwork techniques [for example, labelled field sketches] and instruments [for example, a rain gauge, a camera]
 - c to use atlases and globes, and maps and plans at a range of scales [for example, using contents, keys, grids]
 - d to use secondary sources of information, including aerial photographs [for example, stories, information texts, the internet, satellite images, photographs, videos]
 - e to draw plans and maps at a range of scales [for example, a sketch map of a locality]
 - f to use ICT to help in geographical investigations [for example, creating a data file to analyse fieldwork data]
 - g decision-making skills [for example, deciding what measures are needed to improve safety in a local street].

Knowledge and understanding of places

- 3 Pupils should be taught:
- to identify and describe what places are like [for example, in terms of weather, jobs]
 - the location of places and environments they study and other significant places and environments [for example, those listed on page 115 and places and environments in the news]
 - to describe where places are [for example, in which region/country the places are, whether they are near rivers or hills, what the nearest towns or cities are]
 - to explain why places are like they are [for example, in terms of weather conditions, local resources, historical development]
 - to identify how and why places change [for example, through the closure of shops or building of new houses, through conservation projects] and how they may change in the future [for example, through an increase in traffic or an influx of tourists]
 - to describe and explain how and why places are similar to and different from other places in the same country and elsewhere in the world [for example, comparing a village with a part of a city in the same country]
 - to recognise how places fit within a wider geographical context [for example, as part of a bigger region or country] and are interdependent [for example, through the supply of goods, movements of people].

Knowledge and understanding of patterns and processes

- 4 Pupils should be taught to:
- recognise and explain patterns made by individual physical and human features in the environment [for example, where frost forms in the playground, the distribution of hotels along a seafront]
 - recognise some physical and human processes [for example, river erosion, a factory closure] and explain how these can cause changes in places and environments.

Knowledge and understanding of environmental change and sustainable development

- 5 Pupils should be taught to:
- recognise how people can improve the environment [for example, by reclaiming derelict land] or damage it [for example, by polluting a river], and how decisions about places and environments affect the future quality of people's lives
 - recognise how and why people may seek to manage environments sustainably, and to identify opportunities for their own involvement [for example, taking part in a local conservation project].

Note for 3b

This develops pupils' framework of locational knowledge. Places they study could include those studied in other subjects (for example, Greece in history).

3d, 3f → ICT opportunity

Pupils could use the internet to access comparative weather information about different locations.

Note for 3g

This provides a basis for pupils' understanding of global citizenship in key stage 3.

Note for 4

'Pattern' refers to the way in which physical and human features occur or are arranged (for example, variations in rainfall across the United Kingdom, layout of hedgerows in a landscape). 'Process' refers to a series of events that cause changes in a place or environment (for example, river flow eroding the banks of a river, closure of local shops).

Note for 6a

The locality in the United Kingdom may be either the school locality or a locality elsewhere in the United Kingdom. If the school locality is chosen, it should cover an area larger than the school's immediate vicinity and will normally cover the homes of the majority of pupils in the school. Other localities studied should be similar in size to the locality of the school.

Note for 6b

Countries that are less economically developed include most of those in Africa, Asia, South and Central America (including the Caribbean).

6d → ICT opportunity

Pupils could use e-mail to exchange information about features of settlements with another school.

Note for 7

'Scale' refers to the geographical extent of a study, ie local – a small area like a village or small town; regional – a larger area like the midlands of England or a stretch of coast; and national – a whole country.

Studies of themes could be carried out in the context of the local area, but as the studies of localities are at a local scale, the studies of themes should also include work at regional and national scales.

Breadth of study

6 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through the study of two localities and three themes:

Localities

- a a locality in the United Kingdom
- b a locality in a country that is less economically developed

Themes

- c water and its effects on landscapes and people, including the physical features of rivers [for example, flood plain] or coasts [for example, beach], and the processes of erosion and deposition that affect them
- d how settlements differ and change, including why they differ in size and character [for example, commuter village, seaside town], and an issue arising from changes in land use [for example, the building of new housing or a leisure complex]
- e an environmental issue, caused by change in an environment [for example, increasing traffic congestion, hedgerow loss, drought], and attempts to manage the environment sustainably [for example, by improving public transport, creating a new nature reserve, reducing water use].

7 In their study of localities and themes, pupils should:

- a study at a range of scales – local, regional and national
- b study a range of places and environments in different parts of the world, including the United Kingdom and the European Union
- c carry out fieldwork investigations outside the classroom.

Locational knowledge – examples of significant places and environments

British Isles	Significant places and environments
The two largest islands of the British Isles	Great Britain, Ireland
The two countries of the British Isles	The United Kingdom, the Republic of Ireland
Parts of the United Kingdom	England, Scotland, Wales, Northern Ireland
Capital cities	London, Dublin, Edinburgh, Cardiff, Belfast
The largest mountain areas in Wales and Scotland and the two largest in England	The Cambrian Mountains, the Grampian Mountains, the Lake District, the Pennines
The three longest rivers in the United Kingdom	River Severn, River Thames, River Trent
The seas around the United Kingdom	The English Channel, the Irish Sea, the North Sea
Europe	Significant places and environments
The two countries of the British Isles and their capital cities	The United Kingdom, the Republic of Ireland; London, Dublin
The three countries in the European Union with the highest populations and their capital cities	France, Germany, Italy; Paris, Berlin, Rome
The three countries in the European Union with the largest areas and their capital cities	France, Spain, Sweden; Paris, Madrid, Stockholm
The largest mountain range in Europe	The Alps
The longest river in the European countries identified above	River Rhine
The two largest seas around Europe	The Mediterranean Sea, the North Sea
The world	Significant places and environments
The continents	Africa, Asia, Europe, North America, Oceania, South America, Antarctica
The largest city in each continent	Lagos, Tokyo, Paris, New York, Sydney, Sao Paulo
The six countries with the highest populations	Brazil, China, India, Indonesia, Russia, USA
The six countries with the largest areas	Australia, Brazil, Canada, China, Russia, USA
Areas of family origin of the main minority ethnic groups in the United Kingdom	Bangladesh, the Caribbean, India, Pakistan, the Republic of Ireland
The three largest mountain ranges in the world (on the basis of height and geographical extent)	The Andes, the Himalayas, the Rocky Mountains
The three longest rivers in the world	River Amazon, River Mississippi, River Nile
The largest desert in the world	The Sahara
The oceans	The Arctic, Atlantic, Indian and Pacific oceans
Two canals linking seas and/or oceans	The Panama Canal, the Suez Canal
Main lines of latitude and meridian of longitude	The Poles, the Equator, the Tropics, the Prime Meridian

Exemplar maps showing this information can be found on the National Curriculum web site (www.nc.uk.net) and in the schemes of work for geography.

Art and design is the freedom of the individual, the freedom of expression and the freedom to fail without retort.

Simon Waterfall, Creative Director, Deepend

Art develops spiritual values and contributes a wider understanding to the experience of life, which helps to build a balanced personality.

Bridget Riley, Painter

Art and design is not just a subject to learn, but an activity that you can practise: with your hands, your eyes, your whole personality.

Quentin Blake, Children's Laureate

Awareness and interaction with design is part of the contemporary professional environment. Design issues enter our life every day.

Peter Saville, Art Director and Designer

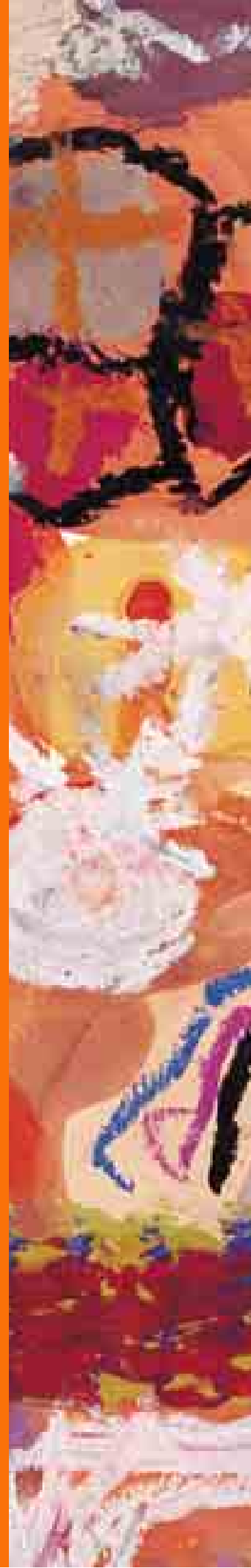
Art and design

The importance of art and design*

Art and design stimulates creativity and imagination. It provides visual, tactile and sensory experiences and a unique way of understanding and responding to the world. Pupils use colour, form, texture, pattern and different materials and processes to communicate what they see, feel and think. Through art and design activities, they learn to make informed value judgements and aesthetic and practical decisions, becoming actively involved in shaping environments.

They explore ideas and meanings in the work of artists, craftspeople and designers. They learn about the diverse roles and functions of art, craft and design in contemporary life, and in different times and cultures. Understanding, appreciation and enjoyment of the visual arts have the power to enrich our personal and public lives.

* Art and design includes craft.





Programme of study: art and design

Key stage 1

During key stage 1 pupils develop their creativity and imagination by exploring the visual, tactile and sensory qualities of materials and processes. They learn about the role of art, craft and design in their environment. They begin to understand colour, shape and space and pattern and texture and use them to represent their ideas and feelings.

Note

The general teaching requirement for health and safety applies in this subject.

1b → links to other subjects

This requirement builds on En1/2c, 2d, 3d.

2b → links to other subjects

This requirement builds on D&T/2c.

3a → links to other subjects

This requirement builds on En1/3c, 3d.

4a → links to other subjects

This requirement builds on Ma3/2a, 2c, 2d.

4a → ICT opportunity

Pupils could use 'paint' software to explore shape, colour and pattern.

Knowledge, skills and understanding

Teaching should ensure that **investigating and making** includes **exploring and developing ideas** and **evaluating and developing work**. **Knowledge and understanding** should inform this process.

Exploring and developing ideas

- 1 Pupils should be taught to:
 - a record from first-hand observation, experience and imagination, and explore ideas
 - b ask and answer questions about the starting points for their work, and develop their ideas.

Investigating and making art, craft and design

- 2 Pupils should be taught to:
 - a investigate the possibilities of a range of materials and processes
 - b try out tools and techniques and apply these to materials and processes, including drawing
 - c represent observations, ideas and feelings, and design and make images and artefacts.

Evaluating and developing work

- 3 Pupils should be taught to:
 - a review what they and others have done and say what they think and feel about it
 - b identify what they might change in their current work or develop in their future work.

Knowledge and understanding

- 4 Pupils should be taught about:
 - a visual and tactile elements, including colour, pattern and texture, line and tone, shape, form and space
 - b materials and processes used in making art, craft and design
 - c differences and similarities in the work of artists, craftspeople and designers in different times and cultures [for example, sculptors, photographers, architects, textile designers].

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
 - a exploring a range of starting points for practical work [for example, themselves, their experiences, stories, natural and made objects and the local environment]
 - b working on their own, and collaborating with others, on projects in two and three dimensions and on different scales
 - c using a range of materials and processes [for example, painting, collage, print making, digital media, textiles, sculpture]
 - d investigating different kinds of art, craft and design [for example, in the locality, in original and reproduction form, during visits to museums, galleries and sites, on the internet].

Programme of study: art and design

Key stage 2

During key stage 2 pupils develop their creativity and imagination through more complex activities. These help to build on their skills and improve their control of materials, tools and techniques. They increase their critical awareness of the roles and purposes of art, craft and design in different times and cultures. They become more confident in using visual and tactile elements and materials and processes to communicate what they see, feel and think.

Note

The general teaching requirement for health and safety applies in this subject.

1b → links to other subjects

This requirement builds on En1/2b, 2e.

1c → ICT opportunity

Pupils could use digital and video cameras to record observations.

2b → links to other subjects

This requirement builds on D&T/2d.

2b → ICT opportunity

Pupils could use digital images as a starting point for creative textile work.

3a → links to other subjects

This requirement builds on En1/3b, 3c.

3a → ICT opportunity

Pupils could develop their own class art gallery on the school web site.

4a → links to other subjects

This requirement builds on Ma3/2d, 3b.

Knowledge, skills and understanding

Teaching should ensure that **investigating and making** includes **exploring and developing ideas** and **evaluating and developing work**. **Knowledge and understanding** should inform this process.

Exploring and developing ideas

- 1 Pupils should be taught to:
 - a record from experience and imagination, to select and record from first-hand observation and to explore ideas for different purposes
 - b question and make thoughtful observations about starting points and select ideas to use in their work
 - c collect visual and other information [for example, images, materials] to help them develop their ideas, including using a sketchbook.

Investigating and making art, craft and design

- 2 Pupils should be taught to:
 - a investigate and combine visual and tactile qualities of materials and processes and to match these qualities to the purpose of the work
 - b apply their experience of materials and processes, including drawing, developing their control of tools and techniques
 - c use a variety of methods and approaches to communicate observations, ideas and feelings, and to design and make images and artefacts.

Evaluating and developing work

- 3 Pupils should be taught to:
 - a compare ideas, methods and approaches in their own and others' work and say what they think and feel about them
 - b adapt their work according to their views and describe how they might develop it further.

Knowledge and understanding

- 4 Pupils should be taught about:
 - a visual and tactile elements, including colour, pattern and texture, line and tone, shape, form and space, and how these elements can be combined and organised for different purposes
 - b materials and processes used in art, craft and design and how these can be matched to ideas and intentions
 - c the roles and purposes of artists, craftspeople and designers working in different times and cultures [for example, Western Europe and the wider world].

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
 - a exploring a range of starting points for practical work [for example, themselves, their experiences, images, stories, drama, music, natural and made objects and environments]
 - b working on their own, and collaborating with others, on projects in two and three dimensions and on different scales
 - c using a range of materials and processes, including ICT [for example, painting, collage, print making, digital media, textiles, sculpture]
 - d investigating art, craft and design in the locality and in a variety of genres, styles and traditions [for example, in original and reproduction form, during visits to museums, galleries and sites, on the internet].

Music is our daily medicine which aids far better communication with others and ourselves.

Evelyn Glennie OBE, Percussionist

Music makes a kind of liquid link between the study of languages, literature and the other arts, history, and the sciences – joining them together in the outer world of feelings and relationships and the inner world of the imagination.

Dr Robin Holloway, Composer

Music is the most universal of all the arts. Ask any person in any city in any country what their favourite music is, and they'll always have an answer. So treasure music and keep it with you always.

John Suchet, Newscaster

Music

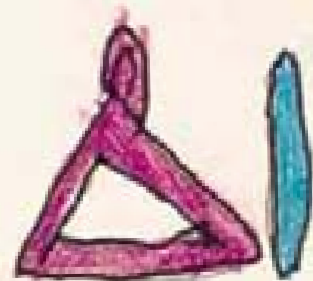
The importance of music

Music is a powerful, unique form of communication that can change the way pupils feel, think and act. It brings together intellect and feeling and enables personal expression, reflection and emotional development. As an integral part of culture, past and present, it helps pupils understand themselves and relate to others, forging important links between the home, school

and the wider world. The teaching of music develops pupils' ability to listen and appreciate a wide variety of music and to make judgements about musical quality. It encourages active involvement in different forms of amateur music making, both individual and communal, developing a sense of group identity and togetherness. It also increases self-discipline and creativity, aesthetic sensitivity and fulfilment.

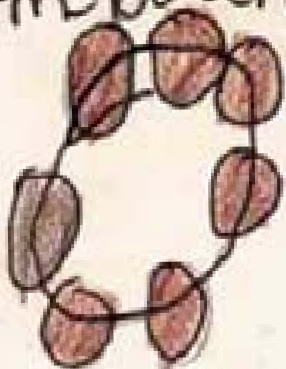


Shell
nuts



triangle

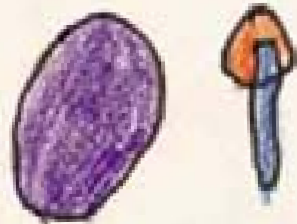
tambourine



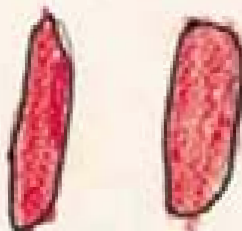
tambour



tambourine tambour



claves



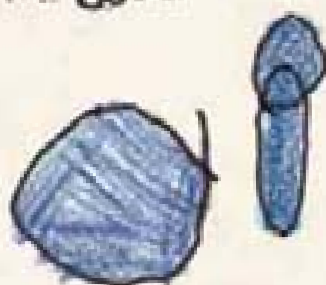
claves



nuts



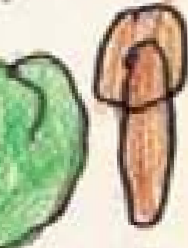
tambour



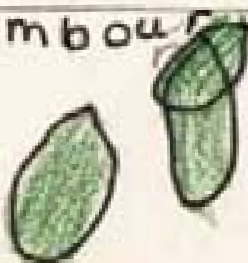
triangle



tambour



tambour



tambour



Coconut
Shells



tambourine tambour



triangle



Programme of study: music

Key stage 1

During key stage 1 pupils listen carefully and respond physically to a wide range of music. They play musical instruments and sing a variety of songs from memory, adding accompaniments and creating short compositions, with increasing confidence, imagination and control.

They explore and enjoy how sounds and silence can create different moods and effects.

1a → links to other subjects

This requirement builds on En1/1a, 8b.

2b → ICT opportunity

Pupils could use software designed to enable exploration of sounds.

3a → links to other subjects

This requirement builds on En1/4a and PE/6a, 6c.

3b → ICT opportunity

Pupils could use recording equipment to recall sounds and identify and make improvements.

Note for 4

Listening is integral to the development of all aspects of pupils' knowledge and understanding of music.

4a → links to other subjects

This requirement builds on En1/2a, 2f.

4b, 4c → links to other subjects

These requirements build on Sc4/3c, 3d.

Note for 4b

- 'pitch' – higher/lower
- 'duration' – longer/shorter, steady pulse, beat, rhythm
- 'dynamics' – louder/quieter/silence
- 'tempo' – faster/slower
- 'timbre' – different types of sound
- 'texture' – different ways sounds are combined
- 'structure' – different ways sounds are organised.

Knowledge, skills and understanding

Teaching should ensure that **listening, and applying knowledge and understanding**, are developed through the interrelated skills of **performing, composing and appraising**.

Controlling sounds through singing and playing – performing skills

- 1 Pupils should be taught how to:
 - a use their voices expressively by singing songs and speaking chants and rhymes
 - b play tuned and untuned instruments
 - c rehearse and perform with others [for example, starting and finishing together, keeping to a steady pulse].

Creating and developing musical ideas – composing skills

- 2 Pupils should be taught how to:
 - a create musical patterns
 - b explore, choose and organise sounds and musical ideas.

Responding and reviewing – appraising skills

- 3 Pupils should be taught how to:
 - a explore and express their ideas and feelings about music using movement, dance and expressive and musical language
 - b make improvements to their own work.

Listening, and applying knowledge and understanding

- 4 Pupils should be taught:
 - a to listen with concentration and to internalise and recall sounds with increasing aural memory
 - b how the combined musical elements of pitch, duration, dynamics, tempo, timbre, texture and silence can be organised and used expressively within simple structures [for example, beginning, middle, end]
 - c how sounds can be made in different ways [for example, vocalising, clapping, by musical instruments, in the environment] and described using given and invented signs and symbols
 - d how music is used for particular purposes [for example, for dance, as a lullaby].

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
- a a range of musical activities that integrate performing, composing and appraising
 - b responding to a range of musical and non-musical starting points
 - c working on their own, in groups of different sizes and as a class
 - d a range of live and recorded music from different times and cultures.

5b → links to other subjects

This requirement builds on En2/3b, 3d–3f and PE/6a–6c.

Programme of study: music

Key stage 2

During key stage 2 pupils sing songs and play instruments with increasing confidence, skill, expression and awareness of their own contribution to a group or class performance. They improvise, and develop their own musical compositions, in response to a variety of different stimuli with increasing personal involvement, independence and creativity. They explore their thoughts and feelings through responding physically, intellectually and emotionally to a variety of music from different times and cultures.

1a → links to other subjects

This requirement builds on En1/1e.

1c → links to other subjects

This requirement builds on En1/1b.

3b → links to other subjects

This requirement builds on PE/6b and En1/1a.

Note for 4

Listening is integral to the development of all aspects of pupils' knowledge and understanding of music.

4a → links to other subjects

This requirement builds on En1/2c.

4b, 4c → links to other subjects

These requirements build on Sc4/3e–3g.

Note for 4b

- 'pitch' – gradations of high/low
- 'duration' – groups of beats, rhythm
- 'dynamics' – gradations of volume
- 'tempo' – different speeds
- 'timbre' – different types of sound
- 'texture' – different ways sounds are combined
- 'structure' – different ways sounds are organised.

Knowledge, skills and understanding

Teaching should ensure that **listening, and applying knowledge and understanding**, are developed through the interrelated skills of **performing, composing and appraising**.

Controlling sounds through singing and playing – performing skills

- 1 Pupils should be taught how to:
 - a sing songs, in unison and two parts, with clear diction, control of pitch, a sense of phrase and musical expression
 - b play tuned and untuned instruments with control and rhythmic accuracy
 - c practise, rehearse and present performances with an awareness of the audience.

Creating and developing musical ideas – composing skills

- 2 Pupils should be taught how to:
 - a improvise, developing rhythmic and melodic material when performing
 - b explore, choose, combine and organise musical ideas within musical structures.

Responding and reviewing – appraising skills

- 3 Pupils should be taught how to:
 - a analyse and compare sounds
 - b explore and explain their own ideas and feelings about music using movement, dance, expressive language and musical vocabulary
 - c improve their own and others' work in relation to its intended effect.

Listening, and applying knowledge and understanding

- 4 Pupils should be taught:
 - a to listen with attention to detail and to internalise and recall sounds with increasing aural memory
 - b how the combined musical elements of pitch, duration, dynamics, tempo, timbre, texture and silence can be organised within musical structures [for example, ostinato] and used to communicate different moods and effects
 - c how music is produced in different ways [for example, through the use of different resources, including ICT] and described through relevant established and invented notations
 - d how time and place can influence the way music is created, performed and heard [for example, the effect of occasion and venue].

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
- a a range of musical activities that integrate performing, composing and appraising
 - b responding to a range of musical and non-musical starting points
 - c working on their own, in groups of different sizes and as a class
 - d using ICT to capture, change and combine sounds
 - e a range of live and recorded music from different times and cultures [for example, from the British Isles, from classical, folk and popular genres, by well-known composers and performers].

5b → links to other subjects

This requirement builds on En2/8 and PE/6a, 6b.

5d → links to other subjects

This requirement builds on ICT/1b.

PE makes



the heart

Physical education

To see young people growing in physical skills, self-confidence and self-worth is a truly enriching experience. Nowhere in school is it more visible than in PE.

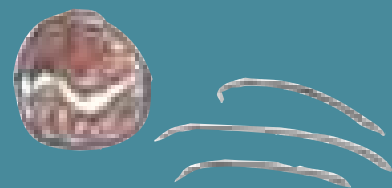
Duncan Goodhew, Swimmer

Exercise activates your brain and gives you energy for everything else, the energy to be enthusiastic about your work. So all your school work will gain from physical education.

Darcey Bussell, Dancer, The Royal Ballet

Physical education is about pupils learning about themselves: their capabilities, their potential and their limitations. It is the foundation of all sports participation. But it goes beyond the individual and understanding themselves – it's learning how to work with and to respect others.

Lucy Pearson, England Cricketer and Teacher





you

beat



Faster.



The importance of physical education

Physical education develops pupils' physical competence and confidence, and their ability to use these to perform in a range of activities. It promotes physical skillfulness, physical development and a knowledge of the body in action. Physical education provides opportunities for pupils to be creative, competitive and to face up to different challenges as individuals and in groups and teams. It promotes positive

attitudes towards active and healthy lifestyles. Pupils learn how to think in different ways to suit a wide variety of creative, competitive and challenging activities. They learn how to plan, perform and evaluate actions, ideas and performances to improve their quality and effectiveness. Through this process pupils discover their aptitudes, abilities and preferences, and make choices about how to get involved lifelong physical activity.

Programme of study: physical education

Key stage 1

During key stage 1 pupils build on their natural enthusiasm for movement, using it to explore and learn about their world. They start to work and play with other pupils in pairs and small groups. By watching, listening and experimenting, they develop their skills in movement and coordination, and enjoy expressing and testing themselves in a variety of situations.

Note

The general teaching requirement for health and safety applies in this subject.

3a → links to other subjects

This requirement builds on En1/1.

4 → links to other subjects

These requirements build on Sc2/2c.

Knowledge, skills and understanding

Teaching should ensure that when **evaluating and improving performance**, connections are made between **developing, selecting and applying skills, tactics and compositional ideas**, and **fitness and health**.

Acquiring and developing skills

- 1 Pupils should be taught to:
 - a explore basic skills, actions and ideas with increasing understanding
 - b remember and repeat simple skills and actions with increasing control and coordination.

Selecting and applying skills, tactics and compositional ideas

- 2 Pupils should be taught to:
 - a explore how to choose and apply skills and actions in sequence and in combination
 - b vary the way they perform skills by using simple tactics and movement phrases
 - c apply rules and conventions for different activities.

Evaluating and improving performance

- 3 Pupils should be taught to:
 - a describe what they have done
 - b observe, describe and copy what others have done
 - c use what they have learnt to improve the quality and control of their work.

Knowledge and understanding of fitness and health

- 4 Pupils should be taught:
 - a how important it is to be active
 - b to recognise and describe how their bodies feel during different activities.

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through dance activities, games activities and gymnastic activities.

Dance activities

- 6 Pupils should be taught to:
- use movement imaginatively, responding to stimuli, including music, and performing basic skills [for example, travelling, being still, making a shape, jumping, turning and gesturing]
 - change the rhythm, speed, level and direction of their movements
 - create and perform dances using simple movement patterns, including those from different times and cultures
 - express and communicate ideas and feelings.

Games activities

- 7 Pupils should be taught to:
- travel with, send and receive a ball and other equipment in different ways
 - develop these skills for simple net, striking/fielding and invasion-type games
 - play simple, competitive net, striking/fielding and invasion-type games that they and others have made, using simple tactics for attacking and defending.

Gymnastic activities

- 8 Pupils should be taught to:
- perform basic skills in travelling, being still, finding space and using it safely, both on the floor and using apparatus
 - develop the range of their skills and actions [for example, balancing, taking off and landing, turning and rolling]
 - choose and link skills and actions in short movement phrases
 - create and perform short, linked sequences that show a clear beginning, middle and end and have contrasts in direction, level and speed.

The following are non-statutory guidelines.

Swimming activities and water safety

- 9 Pupils should be taught to:
- move in water [for example, jump, walk, hop and spin, using swimming aids and support]
 - float and move with and without swimming aids
 - feel the buoyancy and support of water and swimming aids
 - propel themselves in water using different swimming aids, arm and leg actions and basic strokes.

6 → links to other subjects

These requirements build on Mu/3a, 4d, 5b.

6, 8 → ICT opportunity

Pupils could use videos of movements and actions to develop their ideas.

8 → ICT opportunity

Pupils could use a concept keyboard to record the order of specific actions in their sequences.

Note for 9

Schools can also choose to teach swimming during key stage 1. Paragraph 9 gives non-statutory guidelines, which identify aspects of swimming activities and water safety appropriate for key stage 1 pupils.

Programme of study: physical education

Key stage 2

During key stage 2 pupils enjoy being active and using their creativity and imagination in physical activity. They learn new skills, find out how to use them in different ways, and link them to make actions, phrases and sequences of movement. They enjoy communicating, collaborating and competing with each other. They develop an understanding of how to succeed in different activities and learn how to evaluate and recognise their own success.

Note

The general teaching requirement for health and safety applies in this subject.

3b → links to other subjects

This requirement builds on En1/3b.

4 → links to other subjects

These requirements build on Sc2/2c–2e, 2h.

Knowledge, skills and understanding

Teaching should ensure that when **evaluating and improving performance**, connections are made between **developing, selecting and applying skills, tactics and compositional ideas**, and **fitness and health**.

Acquiring and developing skills

- 1 Pupils should be taught to:
 - a consolidate their existing skills and gain new ones
 - b perform actions and skills with more consistent control and quality.

Selecting and applying skills, tactics and compositional ideas

- 2 Pupils should be taught to:
 - a plan, use and adapt strategies, tactics and compositional ideas for individual, pair, small-group and small-team activities
 - b develop and use their knowledge of the principles behind the strategies, tactics and ideas to improve their effectiveness
 - c apply rules and conventions for different activities.

Evaluating and improving performance

- 3 Pupils should be taught to:
 - a identify what makes a performance effective
 - b suggest improvements based on this information.

Knowledge and understanding of fitness and health

- 4 Pupils should be taught:
 - a how exercise affects the body in the short term
 - b to warm up and prepare appropriately for different activities
 - c why physical activity is good for their health and well-being
 - d why wearing appropriate clothing and being hygienic is good for their health and safety.

Breadth of study

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through five areas of activity:
 - a dance activities
 - b games activities
 - c gymnastic activities
 and two activity areas from:
 - d swimming activities and water safety
 - e athletic activities
 - f outdoor and adventurous activities.

Swimming activities and water safety must be chosen as one of these areas of activity unless pupils have completed the full key stage 2 teaching requirements in relation to swimming activities and water safety during key stage 1.

Dance activities

- 6 Pupils should be taught to:
- create and perform dances using a range of movement patterns, including those from different times, places and cultures
 - respond to a range of stimuli and accompaniment.

Games activities

- 7 Pupils should be taught to:
- play and make up small-sided and modified competitive net, striking/fielding and invasion games
 - use skills and tactics and apply basic principles suitable for attacking and defending
 - work with others to organise and keep the games going.

Gymnastic activities

- 8 Pupils should be taught to:
- create and perform fluent sequences on the floor and using apparatus
 - include variations in level, speed and direction in their sequences.

Swimming activities and water safety

- 9 Pupils should be taught to:
- pace themselves in floating and swimming challenges related to speed, distance and personal survival
 - swim unaided for a sustained period of time over a distance of at least 25m
 - use recognised arm and leg actions, lying on their front and back
 - use a range of recognised strokes and personal survival skills [for example, front crawl, back crawl, breaststroke, sculling, floating and surface diving].

Athletic activities

- 10 Pupils should be taught to:
- take part in and design challenges and competitions that call for precision, speed, power or stamina
 - use running, jumping and throwing skills both singly and in combination
 - pace themselves in these challenges and competitions.

Outdoor and adventurous activities

- 11 Pupils should be taught to:
- take part in outdoor activity challenges, including following trails, in familiar, unfamiliar and changing environments
 - use a range of orienteering and problem-solving skills
 - work with others to meet the challenges.

6 → links to other subjects

These requirements build on Mu/3b, 5b.

6, 8 → ICT opportunity

Pupils could use video recordings of their sequences and dances to compare ideas and quality.

6, 8, 10 → ICT opportunity

Pupils could use video and CD-ROMs of actions, balances and body shapes to improve their performance.

Note for 9

If aspects of swimming and water safety have been taught during key stage 1, pupils should start this area of activity at the appropriate point.

11a, 11b → links to other subjects

These requirements build on Gg/2c.

Guidelines



Framework for personal, social and health education and citizenship at key stages 1 & 2

The importance of personal, social and health education and citizenship

Personal, social and health education (PSHE) and citizenship help to give pupils the knowledge, skills and understanding they need to lead confident, healthy, independent lives and to become informed, active, responsible citizens. Pupils are encouraged to take part in a wide range of activities and experiences across and beyond the curriculum, contributing fully to the life of their school and communities. In doing so they learn to recognise their own worth, work well with others and become increasingly responsible for their own learning. They reflect on their experiences and understand how they are developing personally and socially, tackling many of the spiritual, moral, social and cultural issues that are part of growing up. They also find out about the main political and social institutions that affect their lives and about their responsibilities, rights and duties as individuals and members of communities. They learn to understand and respect our common humanity, diversity and differences so that they can go on to form the effective, fulfilling relationships that are an essential part of life and learning.

The following are non-statutory guidelines

Key stage 1

Knowledge, skills and understanding

Developing confidence and responsibility and making the most of their abilities

- 1 Pupils should be taught:
 - a to recognise what they like and dislike, what is fair and unfair, and what is right and wrong
 - b to share their opinions on things that matter to them and explain their views
 - c to recognise, name and deal with their feelings in a positive way
 - d to think about themselves, learn from their experiences and recognise what they are good at
 - e how to set simple goals.

Preparing to play an active role as citizens

- 2 Pupils should be taught:
 - a to take part in discussions with one other person and the whole class
 - b to take part in a simple debate about topical issues
 - c to recognise choices they can make, and recognise the difference between right and wrong
 - d to agree and follow rules for their group and classroom, and understand how rules help them
 - e to realise that people and other living things have needs, and that they have responsibilities to meet them
 - f that they belong to various groups and communities, such as family and school
 - g what improves and harms their local, natural and built environments and about some of the ways people look after them
 - h to contribute to the life of the class and school
 - i to realise that money comes from different sources and can be used for different purposes.

Developing a healthy, safer lifestyle

- 3 Pupils should be taught:
 - a how to make simple choices that improve their health and well-being
 - b to maintain personal hygiene
 - c how some diseases spread and can be controlled
 - d about the process of growing from young to old and how people's needs change
 - e the names of the main parts of the body
 - f that all household products, including medicines, can be harmful if not used properly
 - g rules for, and ways of, keeping safe, including basic road safety, and about people who can help them to stay safe.

During key stage 1 pupils learn about themselves as developing individuals and as members of their communities, building on their own experiences and on the early learning goals for personal, social and emotional development. They learn the basic rules and skills for keeping themselves healthy and safe and for behaving well. They have opportunities to show they can take some responsibility for themselves and their environment. They begin to learn about their own and other people's feelings and become aware of the views, needs and rights of other children and older people. As members of a class and school community, they learn social skills such as how to share, take turns, play, help others, resolve simple arguments and resist bullying. They begin to take an active part in the life of their school and its neighbourhood.

PSHE opportunity in English
2a, 2b → En1/3.

PSHE opportunity in science and geography
2g → Sc2/5c and Gg/1c, 5.

PSHE opportunity in physical education
3a → PE/4.

PSHE opportunity in science
3d–3f → Sc2/2.

PSHE opportunity in design and technology
3g → D&T/2f.

Developing good relationships and respecting the differences between people

- 4 Pupils should be taught:
- a to recognise how their behaviour affects other people
 - b to listen to other people, and play and work cooperatively
 - c to identify and respect the differences and similarities between people
 - d that family and friends should care for each other
 - e that there are different types of teasing and bullying, that bullying is wrong, and how to get help to deal with bullying.

Breadth of opportunities

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through opportunities to:
- a take and share responsibility [for example, for their own behaviour; by helping to make classroom rules and following them; by looking after pets well]
 - b feel positive about themselves [for example, by having their achievements recognised and by being given positive feedback about themselves]
 - c take part in discussions [for example, talking about topics of school, local, national, European, Commonwealth and global concern, such as 'where our food and raw materials for industry come from']
 - d make real choices [for example, between healthy options in school meals, what to watch on television, what games to play, how to spend and save money sensibly]
 - e meet and talk with people [for example, with outside visitors such as religious leaders, police officers, the school nurse]
 - f develop relationships through work and play [for example, by sharing equipment with other pupils or their friends in a group task]
 - g consider social and moral dilemmas that they come across in everyday life [for example, aggressive behaviour, questions of fairness, right and wrong, simple political issues, use of money, simple environmental issues]
 - h ask for help [for example, from family and friends, midday supervisors, older pupils, the police].

The following are non-statutory guidelines

Key stage 2

Knowledge, skills and understanding

Developing confidence and responsibility and making the most of their abilities

- 1 Pupils should be taught:
 - a to talk and write about their opinions, and explain their views, on issues that affect themselves and society
 - b to recognise their worth as individuals by identifying positive things about themselves and their achievements, seeing their mistakes, making amends and setting personal goals
 - c to face new challenges positively by collecting information, looking for help, making responsible choices, and taking action
 - d to recognise, as they approach puberty, how people's emotions change at that time and how to deal with their feelings towards themselves, their family and others in a positive way
 - e about the range of jobs carried out by people they know, and to understand how they can develop skills to make their own contribution in the future
 - f to look after their money and realise that future wants and needs may be met through saving.

Preparing to play an active role as citizens

- 2 Pupils should be taught:
 - a to research, discuss and debate topical issues, problems and events
 - b why and how rules and laws are made and enforced, why different rules are needed in different situations and how to take part in making and changing rules
 - c to realise the consequences of anti-social and aggressive behaviours, such as bullying and racism, on individuals and communities
 - d that there are different kinds of responsibilities, rights and duties at home, at school and in the community, and that these can sometimes conflict with each other
 - e to reflect on spiritual, moral, social, and cultural issues, using imagination to understand other people's experiences
 - f to resolve differences by looking at alternatives, making decisions and explaining choices
 - g what democracy is, and about the basic institutions that support it locally and nationally
 - h to recognise the role of voluntary, community and pressure groups
 - i to appreciate the range of national, regional, religious and ethnic identities in the United Kingdom
 - j that resources can be allocated in different ways and that these economic choices affect individuals, communities and the sustainability of the environment
 - k to explore how the media present information.

During key stage 2 pupils learn about themselves as growing and changing individuals with their own experiences and ideas, and as members of their communities. They become more mature, independent and self-confident. They learn about the wider world and the interdependence of communities within it. They develop their sense of social justice and moral responsibility and begin to understand that their own choices and behaviour can affect local, national or global issues and political and social institutions. They learn how to take part more fully in school and community activities. As they begin to develop into young adults, they face the changes of puberty and transfer to secondary school with support and encouragement from their school. They learn how to make more confident and informed choices about their health and environment; to take more responsibility, individually and as a group, for their own learning; and to resist bullying.

PSHE opportunity in science
1d → Sc2/2f.

PSHE opportunity in English
2a → En1/3 and En2/3.

PSHE opportunity in history
2i → Hi/2b.

PSHE opportunity in science and geography
2j → Sc2/5a and Gg/5.

2k → ICT opportunity
Pupils could use the internet to look at different reports about the same issue.

PSHE opportunity in science

3 → Sc2/2.

PSHE opportunity in physical education

3a → PE/4.

PSHE opportunity in science

3b → Sc2/5f.

PSHE opportunity in design and technology

3g → D&T/2f.

PSHE opportunity in geography and history

4b → Gg/3a and Hi/2a.

Developing a healthy, safer lifestyle

- 3 Pupils should be taught:
- a what makes a healthy lifestyle, including the benefits of exercise and healthy eating, what affects mental health, and how to make informed choices
 - b that bacteria and viruses can affect health and that following simple, safe routines can reduce their spread
 - c about how the body changes as they approach puberty
 - d which commonly available substances and drugs are legal and illegal, their effects and risks
 - e to recognise the different risks in different situations and then decide how to behave responsibly, including sensible road use, and judging what kind of physical contact is acceptable or unacceptable
 - f that pressure to behave in an unacceptable or risky way can come from a variety of sources, including people they know, and how to ask for help and use basic techniques for resisting pressure to do wrong
 - g school rules about health and safety, basic emergency aid procedures and where to get help.

Developing good relationships and respecting the differences between people

- 4 Pupils should be taught:
- a that their actions affect themselves and others, to care about other people's feelings and to try to see things from their points of view
 - b to think about the lives of people living in other places and times, and people with different values and customs
 - c to be aware of different types of relationship, including marriage and those between friends and families, and to develop the skills to be effective in relationships
 - d to realise the nature and consequences of racism, teasing, bullying and aggressive behaviours, and how to respond to them and ask for help
 - e to recognise and challenge stereotypes
 - f that differences and similarities between people arise from a number of factors, including cultural, ethnic, racial and religious diversity, gender and disability
 - g where individuals, families and groups can get help and support.

Breadth of opportunities

- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through opportunities to:
- a take responsibility [for example, for planning and looking after the school environment; for the needs of others, such as by acting as a peer supporter, as a befriender, or as a playground mediator for younger pupils; for looking after animals properly; for identifying safe, healthy and sustainable means of travel when planning their journey to school]
 - b feel positive about themselves [for example, by producing personal diaries, profiles and portfolios of achievements; by having opportunities to show what they can do and how much responsibility they can take]
 - c participate [for example, in the school's decision-making process, relating it to democratic structures and processes such as councils, parliaments, government and voting]
 - d make real choices and decisions [for example, about issues affecting their health and well-being such as smoking; on the use of scarce resources; how to spend money, including pocket money and contributions to charities]
 - e meet and talk with people [for example, people who contribute to society through environmental pressure groups or international aid organisations; people who work in the school and the neighbourhood, such as religious leaders, community police officers]
 - f develop relationships through work and play [for example, taking part in activities with groups that have particular needs, such as children with special needs and the elderly; communicating with children in other countries by satellite, e-mail or letters]
 - g consider social and moral dilemmas that they come across in life [for example, encouraging respect and understanding between different races and dealing with harassment]
 - h find information and advice [for example, through helplines; by understanding about welfare systems in society]
 - i prepare for change [for example, transferring to secondary school].

Guidelines for modern foreign languages at key stage 2

The contribution of modern foreign languages to the primary school curriculum

The learning of a foreign language in primary school provides a valuable educational, social and cultural experience for all pupils. Pupils develop communication and literacy skills that lay the foundation for future language learning. They develop linguistic competence, extend their knowledge of how language works and explore differences and similarities between the foreign language and English. Learning another language raises awareness of the multi-lingual and multi-cultural world and introduces an international dimension to pupils' learning, giving them an insight into their own culture and those of others. The learning of a foreign language provides a medium for cross-curricular links and for the reinforcement of knowledge, skills and understanding developed in other subjects.

Considerations

When planning to introduce a modern foreign language, schools need to consider:

- the aims and objectives for teaching a modern foreign language
- the choice of modern foreign language
- the age at which the language is to be introduced
- the availability of suitably trained teachers
- the amount and frequency of teaching time, including the number of weeks taught in the school year
- continuity and progression from class to class and from primary to secondary school.

The following are non-statutory guidelines

Key stage 2

Knowledge, skills and understanding

While much of the programme of study for modern foreign languages at key stages 3 and 4 can be applied in primary schools, the following aspects are particularly relevant and have been suitably adapted.

Understanding and using the foreign language

- 1 In the early stages of language learning pupils might be taught:
 - a how to use and respond to the foreign language
 - b how to listen carefully in order to discriminate sounds, identify meaning and develop auditory awareness
 - c correct pronunciation and intonation
 - d how to ask and answer questions
 - e techniques for memorising words, phrases and short extracts
 - f how to use context and clues to interpret meaning
 - g how to make use of their knowledge of English or another language in learning the foreign language.

- 2 Pupils can be taught about other countries and cultures by:
 - a working with authentic materials including some from ICT-based sources
 - b considering their own culture and comparing it with others
 - c considering the experiences of other people.

- 3 In order to develop their knowledge, skills and understanding further, pupils might also be taught:
 - a the interrelationship of sounds and writing
 - b simple aspects of grammar and how to apply them
 - c how to initiate conversations
 - d how to use dictionaries and other reference materials
 - e how to communicate with each other in the foreign language in pairs and groups and with their teacher
 - f how to use their knowledge of the language creatively and imaginatively
 - g how to use the foreign language for real purposes.

Links with other subjects

Learning another language presents opportunities for the reinforcement of knowledge, skills and understanding developed in other curriculum areas.

These opportunities can be exploited through:

- aspects of English such as speaking and listening skills, knowledge and understanding of grammatical structures and sentence construction
- aspects of mathematics such as counting, calculations, money, the time and the date

There is no statutory requirement to teach a modern foreign language at key stages 1 and 2. The following guidelines are non-statutory and aimed at those primary schools that are teaching or planning to teach a modern foreign language.

The guidelines are designed for use with pupils in years 5 and 6. They may be adapted for use with other year groups in primary schools.

- songs, alphabet, poems, rhymes and stories in other languages
- international or multi-cultural work, for example celebration of festivals, storytelling
- using ICT, for example e-mail with schools abroad, materials from the internet and satellite television
- geographical and historical work relating to other countries.

Attainment targets

The four attainment targets for modern foreign languages at key stages 3 and 4 can be applied as appropriate at key stage 2. They are:

- attainment target 1: Listening and responding
- attainment target 2: Speaking
- attainment target 3: Reading and responding
- attainment target 4: Writing.

Level descriptions

The following level descriptions are included to inform planning and to help evaluate pupils' progress. They may also be used when transferring information on pupils' competence from class to class and from one school to another.

Attainment target 1: listening and responding

Level 1

Pupils show that they understand simple classroom commands, short statements and questions. They understand speech spoken clearly, face-to-face or from a good-quality recording, with no background noise or interference. They may need a lot of help, such as repetition and gesture.

Level 2

Pupils show that they understand a range of familiar statements and questions [for example, everyday classroom language and instructions for setting tasks]. They respond to a clear model of standard language, but may need items to be repeated.

Level 3

Pupils show that they understand short passages made up of familiar language that is spoken at near normal speed without interference. These passages include instructions, messages and dialogues. Pupils identify and note main points and personal responses [for example, likes, dislikes and feelings], but may need short sections to be repeated.

Level 4

Pupils show that they understand longer passages, made up of familiar language in simple sentences, that are spoken at near normal speed with little interference. They identify and note main points and some details, but may need some items to be repeated.

Attainment target 2: speaking

Level 1

Pupils respond briefly, with single words or short phrases, to what they see and hear. Their pronunciation may be approximate, and they may need considerable support from a spoken model and from visual cues.

Level 2

Pupils give short, simple responses to what they see and hear. They name and describe people, places and objects. They use set phrases [for example, to ask for help and permission]. Their pronunciation may still be approximate and the delivery hesitant, but their meaning is clear.

Level 3

Pupils take part in brief prepared tasks of at least two or three exchanges, using visual or other cues to help them initiate and respond. They use short phrases to express personal responses [for example, likes, dislikes and feelings]. Although they use mainly memorised language, they occasionally substitute items of vocabulary to vary questions or statements.

Level 4

Pupils take part in simple structured conversations of at least three or four exchanges, supported by visual or other cues. They are beginning to use their knowledge of grammar to adapt and substitute single words and phrases. Their pronunciation is generally accurate and they show some consistency in their intonation.

Attainment target 3: reading and responding

Level 1

Pupils show that they understand single words presented in clear script in a familiar context. They may need visual cues.

Level 2

Pupils show that they understand short phrases presented in a familiar context. They match sound to print by reading aloud single familiar words and phrases. They use books or glossaries to find out the meanings of new words.

Level 3

Pupils show that they understand short texts and dialogues, made up of familiar language, printed in books or word-processed. They identify and note main points and personal responses [for example, likes, dislikes and feelings]. They are beginning to read independently, selecting simple texts and using a bilingual dictionary or glossary to look up new words.

Level 4

Pupils show that they understand short stories and factual texts, printed or clearly handwritten. They identify and note main points and some details. When reading on their own, as well as using a bilingual dictionary or glossary, they are beginning to use context to work out what unfamiliar words mean.

Attainment target 4: writing

Level 1

Pupils copy single familiar words correctly. They label items and select appropriate words to complete short phrases or sentences.

Level 2

Pupils copy familiar short phrases correctly. They write or word-process items [for example, simple signs and instructions] and set phrases used regularly in class. When they write familiar words from memory their spelling may be approximate.

Level 3

Pupils write two or three short sentences on familiar topics, using aids [for example, textbooks, wallcharts and their own written work]. They express personal responses [for example, likes, dislikes and feelings]. They write short phrases from memory and their spelling is readily understandable.

Level 4

Pupils write individual paragraphs of about three or four simple sentences, drawing largely on memorised language. They are beginning to use their knowledge of grammar to adapt and substitute individual words and set phrases. They are beginning to use dictionaries or glossaries to check words they have learnt.

Statement of values by the National Forum for Values in Education and the Community

An extract from the preamble to the statement

- The remit of the Forum was to decide whether there are any values that are commonly agreed upon across society, not whether there are any values that should be agreed upon across society. The only authority claimed for these values is the authority of consensus.
- These values are not exhaustive. They do not, for example, include religious beliefs, principles or teachings, though these are often the source of commonly held values. The statement neither implies nor entails that these are the only values that should be taught in schools. There is no suggestion that schools should confine themselves to these values.
- Agreement on the values outlined below is compatible with disagreement on their source. Many believe that God is the ultimate source of value, and that we are accountable to God for our actions; others that values have their source only in human nature, and that we are accountable only to our consciences. The statement of values is consistent with these and other views on the source of value.
- Agreement on these values is compatible with different interpretations and applications of them. It is for schools to decide, reflecting the range of views in the wider community, how these values should be interpreted and applied. For example, the principle ‘we support the institution of marriage’ may legitimately be interpreted as giving rise to positive promotion of marriage as an ideal, of the responsibilities of parenthood, and of the duty of children to respect their parents.
- The ordering of the values does not imply any priority or necessary preference. The ordering reflects the belief of many that values in the context of the self must precede the development of the other values.
- These values are so fundamental that they may appear unexceptional. Their demanding nature is demonstrated both by our collective failure consistently to live up to them, and the moral challenge which acting on them in practice entails.

Schools and teachers can have confidence that there is general agreement in society upon these values. They can therefore expect the support and encouragement of society if they base their teaching and the school ethos on these values.

The statement of values

The self

We value ourselves as unique human beings capable of spiritual, moral, intellectual and physical growth and development.

On the basis of these values, we should:

- develop an understanding of our own characters, strengths and weaknesses
- develop self-respect and self-discipline
- clarify the meaning and purpose in our lives and decide, on the basis of this, how we believe that our lives should be lived
- make responsible use of our talents, rights and opportunities
- strive, throughout life, for knowledge, wisdom and understanding
- take responsibility, within our capabilities, for our own lives.

Relationships

We value others for themselves, not only for what they have or what they can do for us. We value relationships as fundamental to the development and fulfilment of ourselves and others, and to the good of the community.

On the basis of these values, we should:

- respect others, including children
- care for others and exercise goodwill in our dealings with them
- show others they are valued
- earn loyalty, trust and confidence
- work cooperatively with others
- respect the privacy and property of others
- resolve disputes peacefully.

Society

We value truth, freedom, justice, human rights, the rule of law and collective effort for the common good. In particular, we value families as sources of love and support for all their members, and as the basis of a society in which people care for others.

On the basis of these values, we should:

- understand and carry out our responsibilities as citizens
- refuse to support values or actions that may be harmful to individuals or communities
- support families in raising children and caring for dependants
- support the institution of marriage
- recognise that the love and commitment required for a secure and happy childhood can also be found in families of different kinds

- help people to know about the law and legal processes
- respect the rule of law and encourage others to do so
- respect religious and cultural diversity
- promote opportunities for all
- support those who cannot, by themselves, sustain a dignified life-style
- promote participation in the democratic process by all sectors of the community
- contribute to, as well as benefit fairly from, economic and cultural resources
- make truth, integrity, honesty and goodwill priorities in public and private life.

The environment

We value the environment, both natural and shaped by humanity, as the basis of life and a source of wonder and inspiration.

On the basis of these values, we should:

- accept our responsibility to maintain a sustainable environment for future generations
- understand the place of human beings within nature
- understand our responsibilities for other species
- ensure that development can be justified
- preserve balance and diversity in nature wherever possible
- preserve areas of beauty and interest for future generations
- repair, wherever possible, habitats damaged by human development and other means.

Acknowledgements

About the work used in this document

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QCA and the Design Council would also like to thank the figures from public life who contributed their ideas about the value of each curriculum subject.

About the attainment targets

An attainment target sets out the ‘knowledge, skills and understanding that pupils of different abilities and maturities are expected to have by the end of each key stage’¹. Except in the case of citizenship², attainment targets consist of eight level descriptions of increasing difficulty, plus a description for exceptional performance above level 8. Each level description describes the types and range of performance that pupils working at that level should characteristically demonstrate.

The level descriptions provide the basis for making judgements about pupils’ performance at the end of key stages 1, 2 and 3. At key stage 4, national qualifications are the main means of assessing attainment in National Curriculum subjects.

Range of levels within which the great majority of pupils are expected to work		Expected attainment for the majority of pupils at the end of the key stage	
Key stage 1	1–3	at age 7	2
Key stage 2	2–5	at age 11	4
Key stage 3	3–7	at age 14	5/6³

Assessing attainment at the end of a key stage

In deciding on a pupil’s level of attainment at the end of a key stage, teachers should judge which description best fits the pupil’s performance. When doing so each description should be considered alongside descriptions for adjacent levels. This booklet contains the range of levels within which the great majority of key stage 1 and 2 pupils are expected to work – levels 1 to 5 – with the adjacent level 6 for consideration alongside level 5. The full set of level descriptions can be found in the *National Curriculum handbook for secondary teachers in England* and individual subject booklets.

Arrangements for statutory assessment at the end of each key stage are set out in detail in QCA’s annual booklets about assessment and reporting arrangements.

Examples in the level descriptions

The examples in grey type are not statutory.

¹ As defined by the Education Act 1996, section 353a.

² In citizenship, expected performance for the majority of pupils at the end of key stages 3 and 4 is set out in end of key stage descriptions.

³ Including modern foreign languages.



I can ride my
bike without stabilizers

Attainment target 1: speaking and listening

Level 1

Pupils talk about matters of immediate interest. They listen to others and usually respond appropriately. They convey simple meanings to a range of listeners, speaking audibly, and begin to extend their ideas or accounts by providing some detail.

Level 2

Pupils begin to show confidence in talking and listening, particularly where the topics interest them. On occasions, they show awareness of the needs of the listener by including relevant detail. In developing and explaining their ideas they speak clearly and use a growing vocabulary. They usually listen carefully and respond with increasing appropriateness to what others say. They are beginning to be aware that in some situations a more formal vocabulary and tone of voice are used.

Level 3

Pupils talk and listen confidently in different contexts, exploring and communicating ideas. In discussion, they show understanding of the main points. Through relevant comments and questions, they show they have listened carefully. They begin to adapt what they say to the needs of the listener, varying the use of vocabulary and the level of detail. They are beginning to be aware of standard English and when it is used.

Level 4

Pupils talk and listen with confidence in an increasing range of contexts. Their talk is adapted to the purpose: developing ideas thoughtfully, describing events and conveying their opinions clearly. In discussion, they listen carefully, making contributions and asking questions that are responsive to others' ideas and views. They use appropriately some of the features of standard English vocabulary and grammar.

Level 5

Pupils talk and listen confidently in a wide range of contexts, including some that are of a formal nature. Their talk engages the interest of the listener as they begin to vary their expression and vocabulary. In discussion, they pay close attention to what others say, ask questions to develop ideas and make contributions that take account of others' views. They begin to use standard English in formal situations.

Level 6

Pupils adapt their talk to the demands of different contexts with increasing confidence. Their talk engages the interest of the listener through the variety of its vocabulary and expression. Pupils take an active part in discussion, showing understanding of ideas and sensitivity to others. They are usually fluent in their use of standard English in formal situations.

I like writing because
I can make up long
stories. When I first
came to school I didn't
know how to write. I
filled a whole page with
a letter W.



Attainment target 2: reading

Level 1

Pupils recognise familiar words in simple texts. They use their knowledge of letters and sound–symbol relationships in order to read words and to establish meaning when reading aloud. In these activities they sometimes require support. They express their response to poems, stories and non-fiction by identifying aspects they like.

Level 2

Pupils' reading of simple texts shows understanding and is generally accurate. They express opinions about major events or ideas in stories, poems and non-fiction. They use more than one strategy, such as phonic, graphic, syntactic and contextual, in reading unfamiliar words and establishing meaning.

Level 3

Pupils read a range of texts fluently and accurately. They read independently, using strategies appropriately to establish meaning. In responding to fiction and non-fiction they show understanding of the main points and express preferences. They use their knowledge of the alphabet to locate books and find information.

Level 4

In responding to a range of texts, pupils show understanding of significant ideas, themes, events and characters, beginning to use inference and deduction. They refer to the text when explaining their views. They locate and use ideas and information.

Level 5

Pupils show understanding of a range of texts, selecting essential points and using inference and deduction where appropriate. In their responses, they identify key features, themes and characters and select sentences, phrases and relevant information to support their views. They retrieve and collate information from a range of sources.

Level 6

In reading and discussing a range of texts, pupils identify different layers of meaning and comment on their significance and effect. They give personal responses to literary texts, referring to aspects of language, structure and themes in justifying their views. They summarise a range of information from different sources.

Life's a Pizza

A person's life isn't a bowl of cherries,
It's more like a pizza, all colourful,
A little spicy and, sometimes, a bit sloppy.

The early youthful years are
The spring slice of a "four seasons,"
All green and fresh with herbs and capers.

In the summer years, a little spice delights,
With Spanish tomatoes and red hot chillies,
The bright yellow glow of an egg on top.

The dried up mushrooms all crinkly,
Are the dead leaves of the autumn years,
When the skin starts to wrinkle and crease.

The winter slice is always last
Black olives slightly withered and dry,
As you think back to past enjoyments.

What a thoughtful, original poem. I wonder what stage
I am up to? I hope I'm not quite a dried up mushroom!

Attainment target 3: writing

Level 1

Pupils' writing communicates meaning through simple words and phrases. In their reading or their writing, pupils begin to show awareness of how full stops are used. Letters are usually clearly shaped and correctly orientated.

Level 2

Pupils' writing communicates meaning in both narrative and non-narrative forms, using appropriate and interesting vocabulary, and showing some awareness of the reader. Ideas are developed in a sequence of sentences, sometimes demarcated by capital letters and full stops. Simple, monosyllabic words are usually spelt correctly, and where there are inaccuracies the alternative is phonetically plausible. In handwriting, letters are accurately formed and consistent in size.

Level 3

Pupils' writing is often organised, imaginative and clear. The main features of different forms of writing are used appropriately, beginning to be adapted to different readers. Sequences of sentences extend ideas logically and words are chosen for variety and interest. The basic grammatical structure of sentences is usually correct. Spelling is usually accurate, including that of common, polysyllabic words. Punctuation to mark sentences – full stops, capital letters and question marks – is used accurately. Handwriting is joined and legible.

Level 4

Pupils' writing in a range of forms is lively and thoughtful. Ideas are often sustained and developed in interesting ways and organised appropriately for the purpose of the reader. Vocabulary choices are often adventurous and words are used for effect. Pupils are beginning to use grammatically complex sentences, extending meaning. Spelling, including that of polysyllabic words that conform to regular patterns, is generally accurate. Full stops, capital letters and question marks are used correctly, and pupils are beginning to use punctuation within the sentence. Handwriting style is fluent, joined and legible.

Level 5

Pupils' writing is varied and interesting, conveying meaning clearly in a range of forms for different readers, using a more formal style where appropriate. Vocabulary choices are imaginative and words are used precisely. Simple and complex sentences are organised into paragraphs. Words with complex regular patterns are usually spelt correctly. A range of punctuation, including commas, apostrophes and inverted commas, is usually used accurately. Handwriting is joined, clear and fluent and, where appropriate, is adapted to a range of tasks.

Level 6

Pupils' writing often engages and sustains the reader's interest, showing some adaptation of style and register to different forms, including using an impersonal style where appropriate. Pupils use a range of sentence structures and varied vocabulary to create effects. Spelling is generally accurate, including that of irregular words. Handwriting is neat and legible. A range of punctuation is usually used correctly to clarify meaning, and ideas are organised into paragraphs.



Maths

From plus, times, divide
To made, million, mean.

Maths is used in almost
Everything I've seen.

From the petals of a flower
To the distance of a trip.

From the weight of a flower
To the speed of cars or ship.

I measure up the whole wide world
Not just in pounds and pence.

I'm looking at the future
Where my maths will help make sense.



Attainment target 1: using and applying mathematics

Teachers should expect attainment at a given level in this attainment target to be demonstrated through activities in which the mathematics from the other attainment targets is at, or very close to, the same level.

Level 1

Pupils use mathematics as an integral part of classroom activities. They represent their work with objects or pictures and discuss it. They recognise and use a simple pattern or relationship.

Level 2

Pupils select the mathematics they use in some classroom activities. They discuss their work using mathematical language and are beginning to represent it using symbols and simple diagrams. They explain why an answer is correct.

Level 3

Pupils try different approaches and find ways of overcoming difficulties that arise when they are solving problems. They are beginning to organise their work and check results. Pupils discuss their mathematical work and are beginning to explain their thinking. They use and interpret mathematical symbols and diagrams. Pupils show that they understand a general statement by finding particular examples that match it.

Level 4

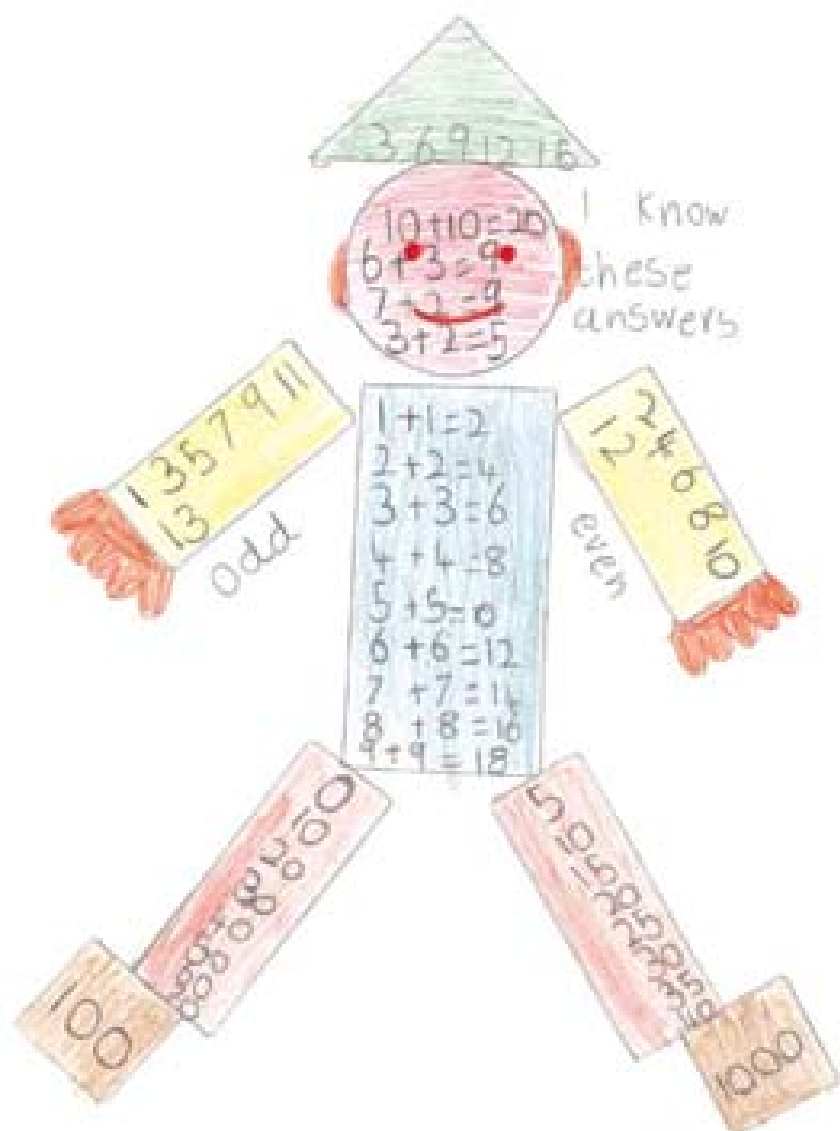
Pupils are developing their own strategies for solving problems and are using these strategies both in working within mathematics and in applying mathematics to practical contexts. They present information and results in a clear and organised way. They search for a solution by trying out ideas of their own.

Level 5

In order to carry through tasks and solve mathematical problems, pupils identify and obtain necessary information. They check their results, considering whether these are sensible. Pupils show understanding of situations by describing them mathematically using symbols, words and diagrams. They draw simple conclusions of their own and give an explanation of their reasoning.

Level 6

Pupils carry through substantial tasks and solve quite complex problems by independently breaking them down into smaller, more manageable tasks. They interpret, discuss and synthesise information presented in a variety of mathematical forms. Pupils' writing explains and informs their use of diagrams. Pupils are beginning to give mathematical justifications.



Attainment target 2: number and algebra

Level 1

Pupils count, order, add and subtract numbers when solving problems involving up to 10 objects. They read and write the numbers involved.

Level 2

Pupils count sets of objects reliably, and use mental recall of addition and subtraction facts to 10. They begin to understand the place value of each digit in a number and use this to order numbers up to 100. They choose the appropriate operation when solving addition and subtraction problems. They use the knowledge that subtraction is the inverse of addition. They use mental calculation strategies to solve number problems involving money and measures. They recognise sequences of numbers, including odd and even numbers.

Level 3

Pupils show understanding of place value in numbers up to 1000 and use this to make approximations. They begin to use decimal notation and to recognise negative numbers, in contexts such as money and temperature. Pupils use mental recall of addition and subtraction facts to 20 in solving problems involving larger numbers. They add and subtract numbers with two digits mentally and numbers with three digits using written methods. They use mental recall of the 2, 3, 4, 5 and 10 multiplication tables and derive the associated division facts. They solve whole-number problems involving multiplication or division, including those that give rise to remainders. They use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent.

Level 4

Pupils use their understanding of place value to multiply and divide whole numbers by 10 or 100. In solving number problems, pupils use a range of mental methods of computation with the four operations, including mental recall of multiplication facts up to 10×10 and quick derivation of corresponding division facts. They use efficient written methods of addition and subtraction and of short multiplication and division. They add and subtract decimals to two places and order decimals to three places. In solving problems with or without a calculator, pupils check the reasonableness of their results by reference to their knowledge of the context or to the size of the numbers. They recognise approximate proportions of a whole and use simple fractions and percentages to describe these. Pupils recognise and describe number patterns, and relationships including multiple, factor and square. They begin to use simple formulae expressed in words. Pupils use and interpret coordinates in the first quadrant.

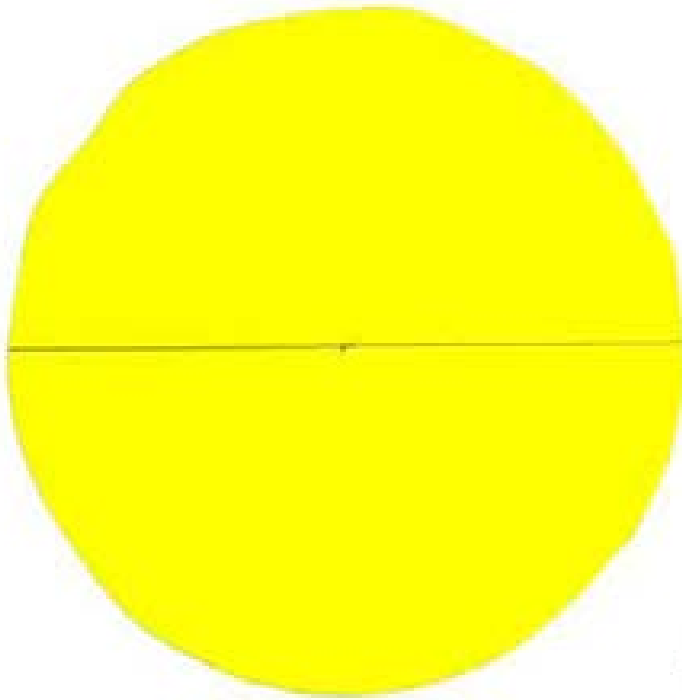
Level 5

Pupils use their understanding of place value to multiply and divide whole numbers and decimals by 10, 100 and 1000. They order, add and subtract negative numbers in context. They use all four operations with decimals to two places. They reduce a fraction to its simplest form by cancelling common factors and solve simple problems involving ratio and direct proportion. They calculate fractional or percentage parts of quantities and measurements, using a calculator where appropriate. Pupils understand and use an appropriate non-calculator method for solving problems that involve multiplying and dividing any three-digit number by any two-digit number. They check their solutions by applying inverse operations or estimating using approximations. They construct, express in symbolic form, and use simple formulae involving one or two operations. They use brackets appropriately. Pupils use and interpret coordinates in all four quadrants.

Level 6

Pupils order and approximate decimals when solving numerical problems and equations [for example, $x^3 + x = 20$], using trial-and-improvement methods. Pupils are aware of which number to consider as 100 per cent, or a whole, in problems involving comparisons, and use this to evaluate one number as a fraction or percentage of another. They understand and use the equivalences between fractions, decimals and percentages, and calculate using ratios in appropriate situations. They add and subtract fractions by writing them with a common denominator. When exploring number sequences, pupils find and describe in words the rule for the next term or nth term of a sequence where the rule is linear. They formulate and solve linear equations with whole-number coefficients. They represent mappings expressed algebraically, and use Cartesian coordinates for graphical representation interpreting general features.

Radius Rules

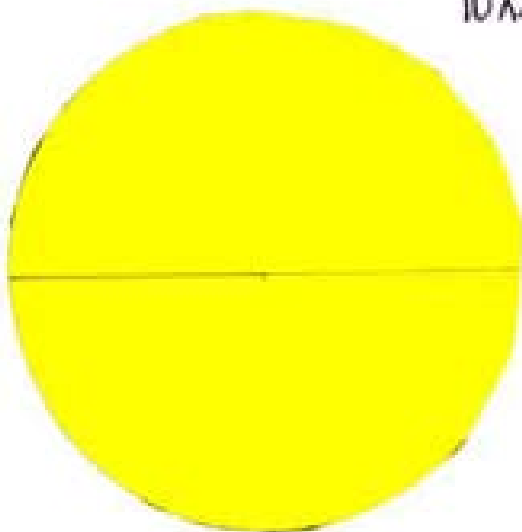


$$\begin{aligned}\text{Radius} &= 5\text{cm} \\ \text{Diameter} &= 10\text{cm} \\ \text{Circumference} &= 31.4\text{cm}\end{aligned}$$

$$\begin{aligned}\pi &= \text{Pi} \\ \text{Pi} &= 3.14\end{aligned}$$

to find the circumference
you have to times the Radius
by two to find the diameter.
when you find the diameter
x it by 3.14 to find the
circumference.

$$\begin{aligned}5 \times 2 &= 10 \\ 10 \times 3.14 &= 31.4\text{cm}\end{aligned}$$



$$\begin{aligned}R &= 3.75\text{cm} \\ D &= 3.75 \times 2 = 7.5\text{cm} \\ C &= 7.5 \times \pi : 3.14 : \text{Pi} = 23.55\text{cm}\end{aligned}$$

$$\text{Circumference} = 23.55\text{cm}$$

Attainment target 3: shape, space and measures

Level 1

When working with 2-D and 3-D shapes, pupils use everyday language to describe properties and positions. They measure and order objects using direct comparison, and order events.

Level 2

Pupils use mathematical names for common 3-D and 2-D shapes and describe their properties, including numbers of sides and corners. They distinguish between straight and turning movements, understand angle as a measurement of turn, and recognise right angles in turns. They begin to use everyday non-standard and standard units to measure length and mass.

Level 3

Pupils classify 3-D and 2-D shapes in various ways using mathematical properties such as reflective symmetry for 2-D shapes. They use non-standard units, standard metric units of length, capacity and mass, and standard units of time, in a range of contexts.

Level 4

Pupils make 3-D mathematical models by linking given faces or edges, draw common 2-D shapes in different orientations on grids. They reflect simple shapes in a mirror line. They choose and use appropriate units and instruments, interpreting, with appropriate accuracy, numbers on a range of measuring instruments. They find perimeters of simple shapes and find areas by counting squares.

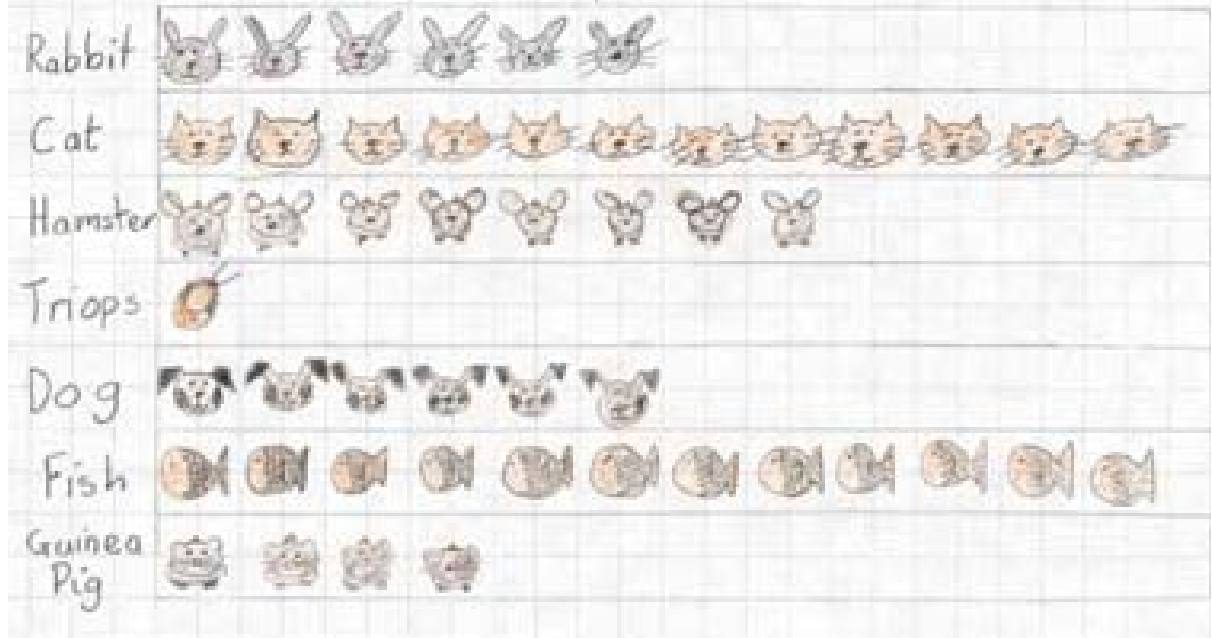
Level 5

When constructing models and when drawing or using shapes, pupils measure and draw angles to the nearest degree, and use language associated with angle. Pupils know the angle sum of a triangle and that of angles at a point. They identify all the symmetries of 2-D shapes. They know the rough metric equivalents of imperial units still in daily use and convert one metric unit to another. They make sensible estimates of a range of measures in relation to everyday situations. Pupils understand and use the formula for the area of a rectangle.

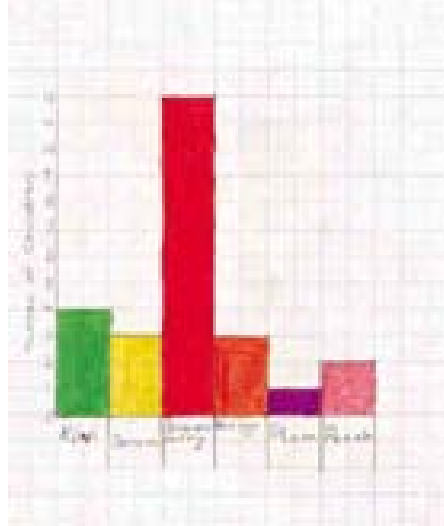
Level 6

Pupils recognise and use common 2-D representations of 3-D objects. They know and use the properties of quadrilaterals in classifying different types of quadrilateral. They solve problems using angle and symmetry properties of polygons and angle properties of intersecting and parallel lines, and explain these properties. They devise instructions for a computer to generate and transform shapes and paths. They understand and use appropriate formulae for finding circumferences and areas of circles, areas of plane rectilinear figures and volumes of cuboids when solving problems. They enlarge shapes by a positive whole-number scale factor.

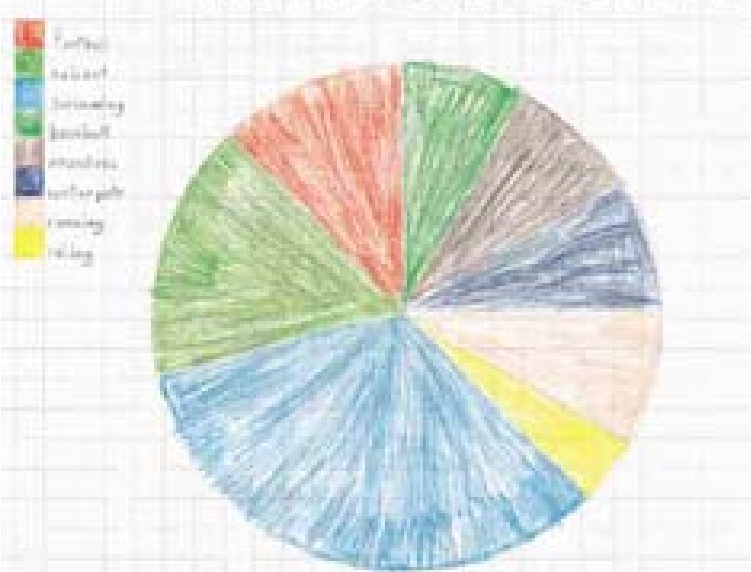
Pictogram to show the number of children in 55 who have different pets.



A graph to show the favorite fruits of 10 people in 3B.



A Pie Chart to show how many children had their money spent on different sports.



Attainment target 4: handling data

This attainment target does not apply at key stage 1.

Level 1

Pupils sort objects and classify them, demonstrating the criterion they have used.

Level 2

Pupils sort objects and classify them using more than one criterion. When they have gathered information, pupils record results in simple lists, tables and block graphs, in order to communicate their findings.

Level 3

Pupils extract and interpret information presented in simple tables and lists. They construct bar charts and pictograms, where the symbol represents a group of units, to communicate information they have gathered, and they interpret information presented to them in these forms.

Level 4

Pupils collect discrete data and record them using a frequency table. They understand and use the mode and range to describe sets of data. They group data, where appropriate, in equal class intervals, represent collected data in frequency diagrams and interpret such diagrams. They construct and interpret simple line graphs.

Level 5

Pupils understand and use the mean of discrete data. They compare two simple distributions, using the range and one of the mode, median or mean. They interpret graphs and diagrams, including pie charts, and draw conclusions. They understand and use the probability scale from 0 to 1. Pupils find and justify probabilities, and approximations to these, by selecting and using methods based on equally likely outcomes and experimental evidence, as appropriate. They understand that different outcomes may result from repeating an experiment.

Level 6

Pupils collect and record continuous data, choosing appropriate equal class intervals over a sensible range to create frequency tables. They construct and interpret frequency diagrams. They construct pie charts. Pupils draw conclusions from scatter diagrams, and have a basic understanding of correlation. When dealing with a combination of two experiments, pupils identify all the outcomes, using diagrammatic, tabular or other forms of communication. In solving problems, they use their knowledge that the total probability of all the mutually exclusive outcomes of an experiment is 1.



Attainment target 1: scientific enquiry

Level 1

Pupils describe or respond appropriately to simple features of objects, living things and events they observe, communicating their findings in simple ways [for example, talking about their work, through drawings, simple charts].

Level 2

Pupils respond to suggestions about how to find things out and, with help, make their own suggestions about how to collect data to answer questions. They use simple texts, with help, to find information. They use simple equipment provided and make observations related to their task. They observe and compare objects, living things and events. They describe their observations using scientific vocabulary and record them, using simple tables when appropriate. They say whether what happened was what they expected.

Level 3

Pupils respond to suggestions and put forward their own ideas about how to find the answer to a question. They recognise why it is important to collect data to answer questions. They use simple texts to find information. They make relevant observations and measure quantities, such as length or mass, using a range of simple equipment. Where appropriate, they carry out a fair test with some help, recognising and explaining why it is fair. They record their observations in a variety of ways. They provide explanations for observations and for simple patterns in recorded measurements. They communicate in a scientific way what they have found out and suggest improvements in their work.

Level 4

Pupils recognise that scientific ideas are based on evidence. In their own investigative work, they decide on an appropriate approach [for example, using a fair test] to answer a question. Where appropriate, they describe, or show in the way they perform their task, how to vary one factor while keeping others the same. Where appropriate, they make predictions. They select information from sources provided for them. They select suitable equipment and make a series of observations and measurements that are adequate for the task. They record their observations, comparisons and measurements using tables and bar charts. They begin to plot points to form simple graphs, and use these graphs to point out and interpret patterns in their data. They begin to relate their conclusions to these patterns and to scientific knowledge and understanding, and to communicate them with appropriate scientific language. They suggest improvements in their work, giving reasons.

Level 5

Pupils describe how experimental evidence and creative thinking have been combined to provide a scientific explanation [for example, Jenner's work on vaccination at key stage 2, Lavoisier's work on burning at key stage 3]. When they try to answer a scientific question, they identify an appropriate approach. They select from a range of sources of information. When the investigation involves a fair test, they identify key factors to be considered. Where appropriate, they make predictions based on their scientific knowledge and understanding. They select apparatus for a range of tasks and plan to use it effectively. They make a series of observations, comparisons or measurements with precision appropriate to the task. They begin to repeat observations and measurements and to offer simple explanations for any differences they encounter. They record observations and measurements systematically and, where appropriate, present data as line graphs. They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding. They make practical suggestions about how their working methods could be improved. They use appropriate scientific language and conventions to communicate quantitative and qualitative data.

Level 6

Pupils describe evidence for some accepted scientific ideas and explain how the interpretation of evidence by scientists leads to the development and acceptance of new ideas. In their own investigative work, they use scientific knowledge and understanding to identify an appropriate approach. They select and use sources of information effectively. They make enough measurements, comparisons and observations for the task. They measure a variety of quantities with precision, using instruments with fine-scale divisions. They choose scales for graphs and diagrams that enable them to show data and features effectively. They identify measurements and observations that do not fit the main pattern shown. They draw conclusions that are consistent with the evidence and use scientific knowledge and understanding to explain them. They make reasoned suggestions about how their working methods could be improved. They select and use appropriate methods for communicating qualitative and quantitative data using scientific language and conventions.

Living Things make New Living Things. 5.

people make babies.



Cats make kittens.



dogs make puppies.



ducks make ducklings



Attainment target 2: life processes and living things

Level 1

Pupils recognise and name external parts of the body [for example, head, arm] and of plants [for example, leaf, flower]. They communicate observations of a range of animals and plants in terms of features [for example, colour of coat, size of leaf]. They recognise and identify a range of common animals [for example, fly, goldfish, robin].

Level 2

Pupils use their knowledge about living things to describe the basic conditions [for example, a supply of food, water, air, light] that animals and plants need in order to survive. They recognise that living things grow and reproduce. They sort living things into groups, using simple features. They describe the basis for their groupings [for example, number of legs, shape of leaf]. They recognise that different living things are found in different places [for example, ponds, woods].

Level 3

Pupils use their knowledge and understanding of basic life processes [for example, growth, reproduction] when they describe differences between living and non-living things. They provide simple explanations for changes in living things [for example, diet affecting the health of humans or other animals, lack of light or water altering plant growth]. They identify ways in which an animal is suited to its environment [for example, a fish having fins to help it swim].

Level 4

Pupils demonstrate knowledge and understanding of life processes and living things drawn from the key stage 2 or key stage 3 programme of study. They use scientific names for some major organs of body systems [for example, the heart at key stage 2, the stomach at key stage 3] and identify the position of these organs in the human body. They identify organs [for example, stamen at key stage 2, stigma, root hairs at key stage 3] of different plants they observe. They use keys based on observable external features to help them to identify and group living things systematically. They recognise that feeding relationships exist between plants and animals in a habitat, and describe these relationships using food chains and terms [for example, predator and prey].

Level 5

Pupils demonstrate an increasing knowledge and understanding of life processes and living things drawn from the key stage 2 or key stage 3 programme of study. They describe the main functions of organs of the human body [for example, the heart at key stage 2, stomach at key stage 3], and of the plant [for example, the stamen at key stage 2, root hairs at key stage 3]. They explain how these functions are essential to the organism. They describe the main stages of the life cycles of humans and flowering plants and point out similarities. They recognise that there is a great variety of living things and understand the importance of classification. They explain that different organisms are found in different habitats because of differences in environmental factors [for example, the availability of light or water].

Level 6

Pupils use knowledge and understanding drawn from the key stage 3 programme of study to describe and explain life processes and features of living things. They use appropriate scientific terminology when they describe life processes [for example, respiration, photosynthesis] in animals and plants. They distinguish between related processes [for example, pollination, fertilisation]. They describe simple cell structure and identify differences between simple animal and plant cells. They describe some of the causes of variation between living things. They explain that the distribution and abundance of organisms in habitats are affected by environmental factors [for example, the availability of light or water].



Attainment target 3: materials and their properties

Level 1

Pupils know about a range of properties [for example, texture, appearance] and communicate observations of materials in terms of these properties.

Level 2

Pupils identify a range of common materials and know about some of their properties. They describe similarities and differences between materials. They sort materials into groups and describe the basis for their groupings in everyday terms [for example, shininess, hardness, smoothness]. They describe ways in which some materials are changed by heating or cooling or by processes such as bending or stretching.

Level 3

Pupils use their knowledge and understanding of materials when they describe a variety of ways of sorting them into groups according to their properties. They explain simply why some materials are particularly suitable for specific purposes [for example, glass for windows, copper for electrical cables]. They recognise that some changes [for example, the freezing of water] can be reversed and some [for example, the baking of clay] cannot, and they classify changes in this way.

Level 4

Pupils demonstrate knowledge and understanding of materials and their properties drawn from the key stage 2 or key stage 3 programme of study. They describe differences between the properties of different materials and explain how these differences are used to classify substances [for example, as solids, liquids, gases at key stage 2, as acids, alkalis at key stage 3]. They describe some methods [for example, filtration, distillation] that are used to separate simple mixtures. They use scientific terms [for example, evaporation, condensation] to describe changes. They use knowledge about some reversible and irreversible changes to make simple predictions about whether other changes are reversible or not.

Level 5

Pupils demonstrate an increasing knowledge and understanding of materials and their properties drawn from the key stage 2 or key stage 3 programme of study. They describe some metallic properties [for example, good electrical conductivity] and use these properties to distinguish metals from other solids. They identify a range of contexts in which changes [for example, evaporation, condensation] take place. They use knowledge about how a specific mixture [for example, salt and water, sand and water] can be separated to suggest ways in which other similar mixtures might be separated.

Level 6

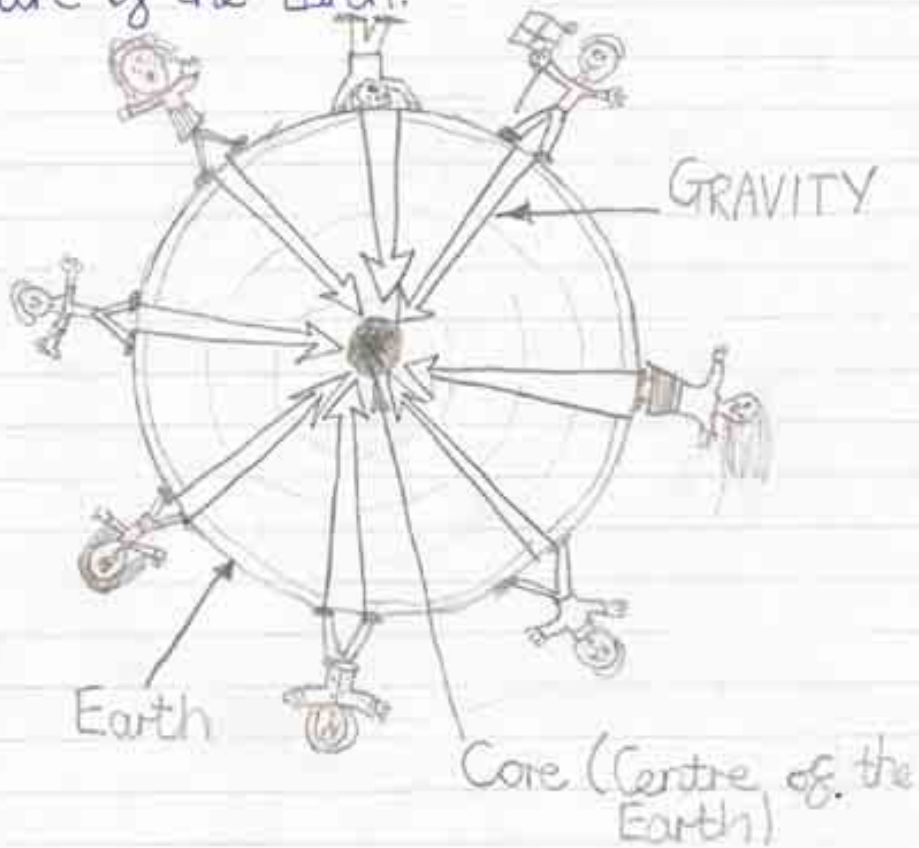
Pupils use knowledge and understanding of the nature and behaviour of materials drawn from the key stage 3 programme of study to describe chemical and physical changes, and how new materials can be made. They recognise that matter is made up of particles, and describe differences between the arrangement and movement of particles in solids, liquids and gases. They identify and describe similarities between some chemical reactions [for example, the reactions of acids with metals, the reactions of a variety of substances with oxygen]. They use word equations to summarise simple reactions. They relate changes of state to energy transfers in a range of contexts [for example, the formation of igneous rocks].

Forces

A force is a push or a pull.

Gravity

Gravity is a force which pulls you to the centre of the Earth.



Attainment target 4: physical processes

Level 1

Pupils communicate observations of changes in light, sound or movement that result from actions [for example, switching on a simple electrical circuit, pushing and pulling objects]. They recognise that sound and light come from a variety of sources and name some of these.

Level 2

Pupils know about a range of physical phenomena and recognise and describe similarities and differences associated with them. They compare the way in which devices [for example, bulbs] work in different electrical circuits. They compare the brightness or colour of lights, and the loudness or pitch of sounds. They compare the movement of different objects in terms of speed or direction.

Level 3

Pupils use their knowledge and understanding of physical phenomena to link cause and effect in simple explanations [for example, a bulb failing to light because of a break in an electrical circuit, the direction or speed of movement of an object changing because of a push or a pull]. They begin to make simple generalisations about physical phenomena [for example, explaining that sounds they hear become fainter the further they are from the source].

Level 4

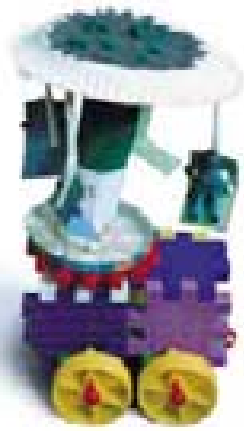
Pupils demonstrate knowledge and understanding of physical processes drawn from the key stage 2 or key stage 3 programme of study. They describe and explain physical phenomena [for example, how a particular device may be connected to work in an electrical circuit, how the apparent position of the Sun changes over the course of a day]. They make generalisations about physical phenomena [for example, motion is affected by forces, including gravitational attraction, magnetic attraction and friction]. They use physical ideas to explain simple phenomena [for example, the formation of shadows, sounds being heard through a variety of materials].

Level 5

Pupils demonstrate knowledge and understanding of physical processes drawn from the key stage 2 or key stage 3 programme of study. They use ideas to explain how to make a range of changes [for example, altering the current in a circuit, altering the pitch or loudness of a sound]. They use some abstract ideas in descriptions of familiar phenomena [for example, objects are seen when light from them enters the eye at key stage 2, forces are balanced when an object is stationary at key stage 3]. They use simple models to explain effects that are caused by the movement of the Earth [for example, the length of a day or year].

Level 6

Pupils use and apply knowledge and understanding of physical processes drawn from the key stage 3 programme of study. They use abstract ideas in some descriptions and explanations [for example, electric current as a way of transferring energy, the sum of several forces determining changes in the direction or the speed of movement of an object, wind and waves as energy resources available for use]. They recognise, and can give examples of, the wide application of many physical concepts [for example, the transfer of energy by light, sound or electricity, the refraction and dispersion of light]. They give explanations of phenomena in which a number of factors have to be considered [for example, the relative brightness of planets and stars].



Attainment target for design and technology

Level 1

Pupils generate ideas and recognise characteristics of familiar products. Their plans show that, with help, they can put their ideas into practice. They use pictures and words to describe what they want to do. They explain what they are making and which tools they are using. They use tools and materials with help, where needed. They talk about their own and other people's work in simple terms and describe how a product works.

Level 2

Pupils generate ideas and plan what to do next, based on their experience of working with materials and components. They use models, pictures and words to describe their designs. They select appropriate tools, techniques and materials, explaining their choices. They use tools and assemble, join and combine materials and components in a variety of ways. They recognise what they have done well as their work progresses, and suggest things they could do better in the future.

Level 3

Pupils generate ideas and recognise that their designs have to meet a range of different needs. They make realistic plans for achieving their aims. They clarify ideas when asked and use words, labelled sketches and models to communicate the details of their designs. They think ahead about the order of their work, choosing appropriate tools, equipment, materials, components and techniques. They use tools and equipment with some accuracy to cut and shape materials and to put together components. They identify where evaluation of the design and make process and their products has led to improvements.

Level 4

Pupils generate ideas by collecting and using information. They take users' views into account and produce step-by-step plans. They communicate alternative ideas using words, labelled sketches and models, showing that they are aware of constraints. They work with a variety of materials and components with some accuracy, paying attention to quality of finish and to function. They select and work with a range of tools and equipment. They reflect on their designs as they develop, bearing in mind the way the product will be used. They identify what is working well and what could be improved.

Level 5

Pupils draw on and use various sources of information. They clarify their ideas through discussion, drawing and modelling. They use their understanding of the characteristics of familiar products when developing and communicating their own ideas. They work from their own detailed plans, modifying them where appropriate. They work with a range of tools, materials, equipment, components and processes with some precision. They check their work as it develops and modify their approach in the light of progress. They test and evaluate their products, showing that they understand the situations in which their designs will have to function and are aware of resources as a constraint. They evaluate their products and their use of information sources.

Level 6

Pupils draw on and use a range of sources of information, and show that they understand the form and function of familiar products. They make models and drawings to explore and test their design thinking, discussing their ideas with users. They produce plans that outline alternative methods of progressing and develop detailed criteria for their designs and use these to explore design proposals. They work with a range of tools, materials, equipment, components and processes and show that they understand their characteristics. They check their work as it develops and modify their approach in the light of progress. They evaluate how effectively they have used information sources, using the results of their research to inform their judgements when designing and making. They evaluate their products as they are being used, and identify ways of improving them.

Simple Search Results

Web Results for: "Sir Winston Churchill"

(25 of 70) - show summaries for these results.

- [Sir Winston Churchill and Great Britain's Finest Hour](#)
- [The Churchill Society London. Frontispiece.](#)
- [Woodstock - Oxfordshire](#)
- [Famous Quotes](#)
- [World War II](#)
- [Sir Winston Churchill Secondary School](#)
- [Sir Alexander Mackenzie School](#)
- [Ide Hill Antiques Fair in Kent, England](#)
- [Bourlet Fine Art Framers](#)
- [Edmonton Klondike Days Festival - Ten Day Edmonton Klondike ...](#)
- [Discount Cavalry Tack](#)
- [EdgeMaster's Domain](#)
- [The History Merchant - Main Page](#)
- [City of Edmonton](#)
- [Chartwell](#)
- [de Fries Books-HomePage](#)
- [Carifest Festival - Edmonton, Alberta's Caribbean Festival](#)
- [NetLondon : Send a London Postcard](#)
- [Tatsfield in Surrey. A personal view by D Shrubbs](#)
- [Safya Kalikivayi's Home Page](#)
- [Londonerry Arms Hotel - Northern Ireland's Best Kept Secret...](#)
- [Welcome to Edmonton FreeNet](#)
- [Home Page](#)
- [Welcome to Edmonton FreeNet](#)
- [Welcome to Edmonton FreeNet](#)

Get the next 25 results

Internet Search Form

Information looking for and what typed in	Reason	Search Engine used	No. of hits	No. useful	Interesting sites found
Churchill		Web Crawler	1207	1	www.winstonchurchill.org
Winston Churchill		Web Crawler	4936	1	www.winstonchurchill.org
Sir Winston Churchill - school		Web Crawler	104329		
Sir Winston Churchill		Web Crawler	78		
Sir Winston Churchill - School - Greater London - London		Yahoo	10	11	www.schroff.com/TCG/Colony-e.html www.winstonchurchill.org www.winstonchurchill.org/AboutUs.htm

Attainment target for information and communication technology capability

Level 1

Pupils explore information from various sources, showing they know that information exists in different forms. They use ICT to work with text, images and sound to help them share their ideas. They recognise that many everyday devices respond to signals and instructions. They make choices when using such devices to produce different outcomes. They talk about their use of ICT.

Level 2

Pupils use ICT to organise and classify information and to present their findings. They enter, save and retrieve work. They use ICT to help them generate, amend and record their work and share their ideas in different forms, including text, tables, images and sound. They plan and give instructions to make things happen and describe the effects. They use ICT to explore what happens in real and imaginary situations. They talk about their experiences of ICT both inside and outside school.

Level 3

Pupils use ICT to save information and to find and use appropriate stored information, following straightforward lines of enquiry. They use ICT to generate, develop, organise and present their work. They share and exchange their ideas with others. They use sequences of instructions to control devices and achieve specific outcomes. They make appropriate choices when using ICT-based models or simulations to help them find things out and solve problems. They describe their use of ICT and its use outside school.

Level 4

Pupils understand the need for care in framing questions when collecting, finding and interrogating information. They interpret their findings, question plausibility and recognise that poor-quality information leads to unreliable results. They add to, amend and combine different forms of information from a variety of sources. They use ICT to present information in different forms and show they are aware of the intended audience and the need for quality in their presentations. They exchange information and ideas with others in a variety of ways, including using e-mail. They use ICT systems to control events in a predetermined manner and to sense physical data. They use ICT-based models and simulations to explore patterns and relationships, and make predictions about the consequences of their decisions. They compare their use of ICT with other methods and with its use outside school.

Level 5

Pupils select the information they need for different purposes, check its accuracy and organise it in a form suitable for processing. They use ICT to structure, refine and present information in different forms and styles for specific purposes and audiences. They exchange information and ideas with others in a variety of ways, including using e-mail. They create sequences of instructions to control events, and understand the need to be precise when framing and sequencing instructions. They understand how ICT devices with sensors can be used to monitor and measure external events. They explore the effects of changing the variables in an ICT-based model. They discuss their knowledge and experience of using ICT and their observations of its use outside school. They assess the use of ICT in their work and are able to reflect critically in order to make improvements in subsequent work.

Level 6

Pupils develop and refine their work to enhance its quality, using information from a range of sources. Where necessary, they use complex lines of enquiry to test hypotheses. They present their ideas in a variety of ways and show a clear sense of audience. They develop, try out and refine sequences of instructions to monitor, measure and control events, and show efficiency in framing these instructions. They use ICT-based models to make predictions and vary the rules within the models. They assess the validity of these models by comparing their behaviour with information from other sources. They discuss the impact of ICT on society.



Hannibal crossing the Alps

Attainment target for history

Level 1

Pupils recognise the distinction between present and past in their own and other people's lives. They show their emerging sense of chronology by placing a few events and objects in order, and by using everyday terms about the passing of time. They know and recount episodes from stories about the past. They find answers to some simple questions about the past from sources of information.

Level 2

Pupils show their developing sense of chronology by using terms concerned with the passing of time, by placing events and objects in order, and by recognising that their own lives are different from the lives of people in the past. They show knowledge and understanding of aspects of the past beyond living memory, and of some of the main events and people they have studied. They are beginning to recognise that there are reasons why people in the past acted as they did. They are beginning to identify some of the different ways in which the past is represented. They observe or handle sources of information to answer questions about the past on the basis of simple observations.

Level 3

Pupils show their developing understanding of chronology by their realisation that the past can be divided into different periods of time, their recognition of some of the similarities and differences between these periods, and their use of dates and terms. They show knowledge and understanding of some of the main events, people and changes studied. They are beginning to give a few reasons for, and results of, the main events and changes. They identify some of the different ways in which the past is represented. They use sources of information in ways that go beyond simple observations to answer questions about the past.

Level 4

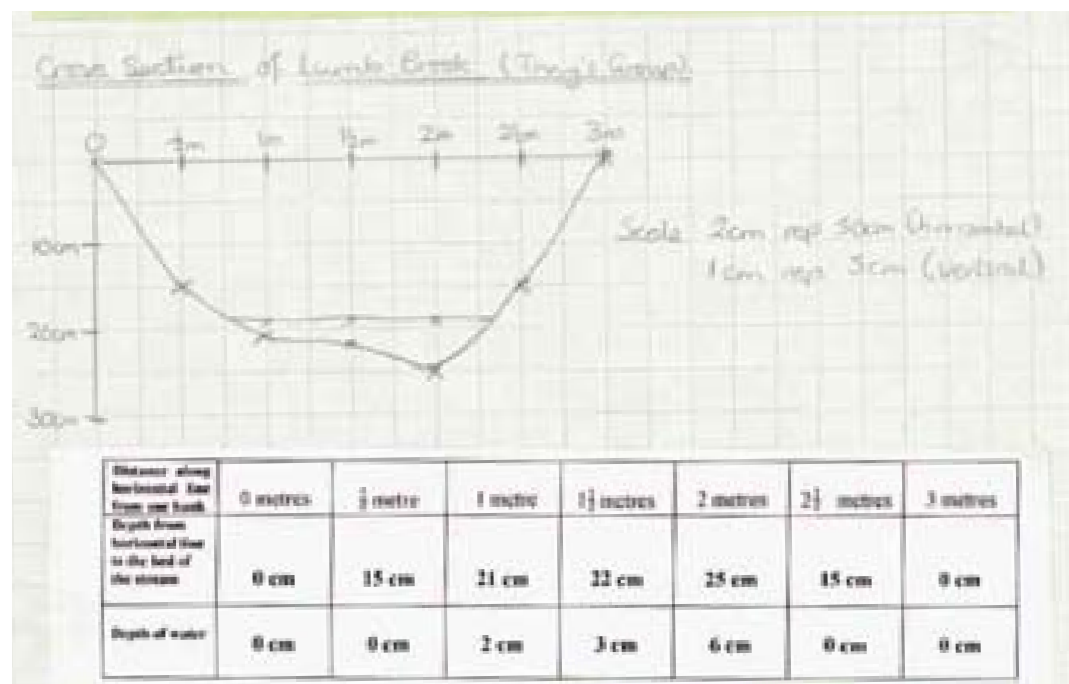
Pupils show factual knowledge and understanding of aspects of the history of Britain and the wider world. They use this to describe characteristic features of past societies and periods, and to identify changes within and across different periods. They describe some of the main events, people and changes. They give some reasons for, and results of, the main events and changes. They show some understanding that aspects of the past have been represented and interpreted in different ways. They are beginning to select and combine information from different sources. They are beginning to produce structured work, making appropriate use of dates and terms.

Level 5

Pupils show increasing depth of factual knowledge and understanding of aspects of the history of Britain and the wider world. They use this to describe features of past societies and periods and to begin to make links between them. They describe events, people and changes. They describe and make links between events and changes and give reasons for, and results of, these events and changes. They know that some events, people and changes have been interpreted in different ways and suggest possible reasons for this. Using their knowledge and understanding, pupils are beginning to evaluate sources of information and identify those that are useful for particular tasks. They select and organise information to produce structured work, making appropriate use of dates and terms.

Level 6

Pupils use their factual knowledge and understanding of the history of Britain and the wider world to describe past societies and periods, and to make links between features within and across different periods. They examine and explain the reasons for, and results of, events and changes. Pupils describe, and begin to analyse, why there are different historical interpretations of events, people and changes. Using their knowledge and understanding, they identify and evaluate sources of information, which they use critically to reach and support conclusions. They select, organise and deploy relevant information to produce structured work, making appropriate use of dates and terms.



Attainment target for geography

Level 1

Pupils show their knowledge, skills and understanding in studies at a local scale. They recognise and make observations about physical and human features of localities. They express their views on features of the environment of a locality. They use resources that are given to them, and their own observations, to ask and respond to questions about places and environments.

Level 2

Pupils show their knowledge, skills and understanding in studies at a local scale. They describe physical and human features of places, and recognise and make observations about those features that give places their character. They show an awareness of places beyond their own locality. They express views on the environment of a locality and recognise how people affect the environment. They carry out simple tasks and select information using resources that are given to them. They use this information and their own observations to help them ask and respond to questions about places and environments. They begin to use appropriate geographical vocabulary.

Level 3

Pupils show their knowledge, skills and understanding in studies at a local scale. They describe and compare the physical and human features of different localities and offer explanations for the locations of some of those features. They are aware that different places may have both similar and different characteristics. They offer reasons for some of their observations and for their views and judgements about places and environments. They recognise how people seek to improve and sustain environments. They use skills and sources of evidence to respond to a range of geographical questions, and begin to use appropriate vocabulary to communicate their findings.

Level 4

Pupils show their knowledge, skills and understanding in studies of a range of places and environments at more than one scale and in different parts of the world. They begin to recognise and describe geographical patterns and to appreciate the importance of wider geographical location in understanding places. They recognise and describe physical and human processes. They begin to understand how these can change the features of places, and how these changes affect the lives and activities of people living there. They understand how people can both improve and damage the environment. They explain their own views and the views that other people hold about an environmental change. Drawing on their knowledge and understanding, they suggest suitable geographical questions, and use a range of geographical skills from the key stage 2 or 3 programme of study to help them investigate places and environments. They use primary and secondary sources of evidence in their investigations and communicate their findings using appropriate vocabulary.

Level 5

Pupils show their knowledge, skills and understanding in studies of a range of places and environments at more than one scale and in different parts of the world. They describe and begin to explain geographical patterns and physical and human processes. They describe how these processes can lead to similarities and differences in the environments of different places and in the lives of people who live there. They recognise some of the links and relationships that make places dependent on each other. They suggest explanations for the ways in which human activities cause changes to the environment and the different views people hold about them. They recognise how people try to manage environments sustainably. They explain their own views and begin to suggest relevant geographical questions and issues. Drawing on their knowledge and understanding, they select and use appropriate skills and ways of presenting information from the key stage 2 or 3 programme of study to help them investigate places and environments. They select information and sources of evidence, suggest plausible conclusions to their investigations and present their findings both graphically and in writing.

Level 6

Pupils show their knowledge, skills and understanding in studies of a wide range of places and environments at various scales, from local to global, and in different parts of the world. They describe and explain a range of physical and human processes and recognise that these processes interact to produce the distinctive characteristics of places. They describe ways in which physical and human processes operating at different scales create geographical patterns and lead to changes in places. They appreciate the many links and relationships that make places dependent on each other. They recognise how conflicting demands on the environment may arise and describe and compare different approaches to managing environments. They appreciate that different values and attitudes, including their own, result in different approaches that have different effects on people and places. Drawing on their knowledge and understanding, they suggest relevant geographical questions and issues and appropriate sequences of investigation. They select a range of skills and sources of evidence from the key stage 3 programme of study and use them effectively in their investigations. They present their findings in a coherent way and reach conclusions that are consistent with the evidence.



Attainment target for art and design

Level 1

Pupils respond to ideas. They use a variety of materials and processes to communicate their ideas and meanings, and design and make images and artefacts. They describe what they think or feel about their own and others' work.

Level 2

Pupils explore ideas. They investigate and use a variety of materials and processes to communicate their ideas and meanings, and design and make images and artefacts. They comment on differences in others' work, and suggest ways of improving their own.

Level 3

Pupils explore ideas and collect visual and other information for their work. They investigate visual and tactile qualities in materials and processes, communicate their ideas and meanings, and design and make images and artefacts for different purposes. They comment on similarities and differences between their own and others' work, and adapt and improve their own.

Level 4



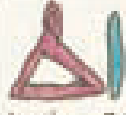









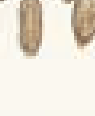






















Pupils explore ideas and collect visual and other information to help them develop their work. They use their knowledge and understanding of materials and processes to communicate ideas and meanings, and make images and artefacts, combining and organising visual and tactile qualities to suit their intentions. They compare and comment on ideas, methods and approaches used in their own and others' work, relating these to the context in which the work was made. They adapt and improve their work to realise their own intentions.

Level 5

Pupils explore ideas and select visual and other information. They use this in developing their work, taking account of the purpose. They manipulate materials and processes to communicate ideas and meanings and make images and artefacts, matching visual and tactile qualities to their intentions. They analyse and comment on ideas, methods and approaches used in their own and others' work, relating these to its context. They adapt and refine their work to reflect their own view of its purpose and meaning.

Level 6

Pupils explore ideas and assess visual and other information, including images and artefacts from different historical, social and cultural contexts. They use this information to develop their ideas, taking account of purpose and audience. They manipulate materials and processes and analyse outcomes. They interpret visual and tactile qualities to communicate ideas and meanings, and realise their intentions. They analyse and comment on how ideas and meanings are conveyed in their own and others' work. They explain how their understanding of the context affects their views and practice.

 claves	 coconut shells	 triangle	 tambores	 triangle	 triangle	
 coconut shells	 tambores	 triangle	 claves	 claves	 coconut shells	 triangle
 triangle	 coconut shells		 triangle	 triangle	 tambores	
 claves	 triangle	 coconut shells	 coconut shells	 coconut shells		 triangle
 claves	 tambores	 triangle	 triangle		 coconut shells	 coconut shells

Attainment target for music

Level 1

Pupils recognise and explore how sounds can be made and changed. They use their voices in different ways such as speaking, singing and chanting, and perform with awareness of others. They repeat short rhythmic and melodic patterns and create and choose sounds in response to given starting points. They respond to different moods in music and recognise well-defined changes in sounds, identify simple repeated patterns and take account of musical instructions.

Level 2

Pupils recognise and explore how sounds can be organised. They sing with a sense of the shape of the melody, and perform simple patterns and accompaniments keeping to a steady pulse. They choose carefully and order sounds within simple structures such as beginning, middle, end, and in response to given starting points. They represent sounds with symbols and recognise how the musical elements can be used to create different moods and effects. They improve their own work.

Level 3

Pupils recognise and explore the ways sounds can be combined and used expressively. They sing in tune with expression and perform rhythmically simple parts that use a limited range of notes. They improvise repeated patterns and combine several layers of sound with awareness of the combined effect. They recognise how the different musical elements are combined and used expressively and make improvements to their own work, commenting on the intended effect.

Level 4

Pupils identify and explore the relationship between sounds and how music reflects different intentions. While performing by ear and from simple notations they maintain their own part with awareness of how the different parts fit together and the need to achieve an overall effect. They improvise melodic and rhythmic phrases as part of a group performance and compose by developing ideas within musical structures. They describe, compare and evaluate different kinds of music using an appropriate musical vocabulary. They suggest improvements to their own and others' work, commenting on how intentions have been achieved.

Level 5

Pupils identify and explore musical devices and how music reflects time and place. They perform significant parts from memory and from notations with awareness of their own contribution such as leading others, taking a solo part and/or providing rhythmic support. They improvise melodic and rhythmic material within given structures, use a variety of notations and compose music for different occasions using appropriate musical devices such as melody, rhythms, chords and structures. They analyse and compare musical features. They evaluate how venue, occasion and purpose affects the way music is created, performed and heard. They refine and improve their work.

Level 6

Pupils identify and explore the different processes and contexts of selected musical genres and styles. They select and make expressive use of tempo, dynamics, phrasing and timbre. They make subtle adjustments to fit their own part within a group performance. They improvise and compose in different genres and styles, using harmonic and non-harmonic devices where relevant, sustaining and developing musical ideas and achieving different intended effects. They use relevant notations to plan, revise and refine material. They analyse, compare and evaluate how music reflects the contexts in which it is created, performed and heard. They make improvements to their own and others' work in the light of the chosen style.



Attainment target for physical education

Level 1

Pupils copy, repeat and explore simple skills and actions with basic control and coordination. They start to link these skills and actions in ways that suit the activities. They describe and comment on their own and others' actions. They talk about how to exercise safely, and how their bodies feel during an activity.

Level 2

Pupils explore simple skills. They copy, remember, repeat and explore simple actions with control and coordination. They vary skills, actions and ideas and link these in ways that suit the activities. They begin to show some understanding of simple tactics and basic compositional ideas. They talk about differences between their own and others' performance and suggest improvements. They understand how to exercise safely, and describe how their bodies feel during different activities.

Level 3

Pupils select and use skills, actions and ideas appropriately, applying them with coordination and control. They show that they understand tactics and composition by starting to vary how they respond. They can see how their work is similar to and different from others' work, and use this understanding to improve their own performance. They give reasons why warming up before an activity is important, and why physical activity is good for their health.

Level 4

Pupils link skills, techniques and ideas and apply them accurately and appropriately. Their performance shows precision, control and fluency, and that they understand tactics and composition. They compare and comment on skills, techniques and ideas used in their own and others' work, and use this understanding to improve their performance. They explain and apply basic safety principles in preparing for exercise. They describe what effects exercise has on their bodies, and how it is valuable to their fitness and health.

Level 5

Pupils select and combine their skills, techniques and ideas and apply them accurately and appropriately, consistently showing precision, control and fluency. When performing, they draw on what they know about strategy, tactics and composition. They analyse and comment on skills and techniques and how these are applied in their own and others' work. They modify and refine skills and techniques to improve their performance. They explain how the body reacts during different types of exercise, and warm up and cool down in ways that suit the activity. They explain why regular, safe exercise is good for their fitness and health.

Level 6

Pupils select and combine skills, techniques and ideas. They apply them in ways that suit the activity, with consistent precision, control and fluency. When planning their own and others' work, and carrying out their own work, they draw on what they know about strategy, tactics and composition in response to changing circumstances, and what they know about their own and others' strengths and weaknesses. They analyse and comment on how skills, techniques and ideas have been used in their own and others' work, and on compositional and other aspects of performance, and suggest ways to improve. They explain how to prepare for, and recover from, the activities. They explain how different types of exercise contribute to their fitness and health and describe how they might get involved in other types of activities and exercise.

The National Curriculum attainment targets



This handbook:

- sets out the legal requirements of the National Curriculum in England for pupils aged five to 11
- provides information to help teachers implement the National Curriculum in their schools.

It has been written for primary teachers. Parents, governors and all those with an interest in education will also find it useful.

The National Curriculum for pupils aged 11 to 16 is set out in the handbook for secondary teachers. There are also separate booklets for the 12 National Curriculum subjects.

All these publications and related materials can be found on the National Curriculum web site at www.nc.uk.net.