A Guide to the New National Curriculum

Years 5 and 6

WITHAM ST. HUGHS ACADEMY

2015/16

Introduction

For generations, parents have found themselves visiting primary schools with their children only to hear themselves saying, "It's not like when I was at school." Things change quickly in education, and at no time in the past 25 years has that been truer than September 2014 when the whole school curriculum changes for maintained schools throughout England.

This guide is intended to support parents of primary school children. Obviously it would be impossible to set out in detail everything your child would learn during their six years of statutory primary education, but by providing an outline of typical content and some background information about how the curriculum and assessment works, hopefully it will help parents support their children in making the most of their education.

What's changed?

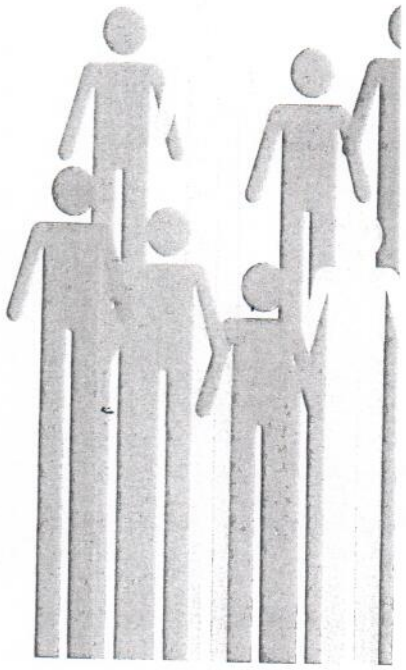
English, Maths and Science remain very important and are considered the core subjects in both primary and secondary education. The National Curriculum sets out in some detail what must be taught in each of these subjects, and they will take up a substantial part of your child's learning week. Alongside these are the familiar foundation subjects: Art, Computing, Design & Technology, Foreign Languages (age 7+ only), Geography, History, Music, and Physical Education. For these foundation subjects, the details in the curriculum are significantly briefer: schools have much more flexibility regarding what they cover in these subjects.

Much of the publicity about the changes to the curriculum has focussed on 'higher expectations' in various subjects, and it is certainly the case that in some areas the content of the new primary curriculum is significantly more demanding than in the past. For example, in mathematics there is now much greater focus on the skills of arithmetic and also on working with fractions. In science, a new unit of work on evolution is introduced for Year 6; work which would have previously been studied in secondary school. In English lessons there will now be more attention paid to the study of grammar and spelling; an area which was far less notable in previous curricula.

High Achievers

If your child is achieving well, rather than moving on to the following year group's work many schools will encourage more in-depth and investigative work to allow a greater mastery and understanding of concepts and ideas.

The new curriculum begins in schools from September 2014. However, for children in Year 2 and Year 6, the new curriculum won't become statutory until 2015. This is because these children are in the last year of the Key Stages. At this age, children are formally assessed to judge their progress against the requirements of the curriculum. Because the 2014 curriculum will only have been in place for nine months, these children will be assessed against the requirements of the old curriculum in the National Curriculum Tests. New tests will be produced for the summer of 2016 to assess work from the new curriculum.



Tests your child will take

Lots of schools use tests at all stages of their work. For the most part, these are part of a normal classroom routine, and support teachers' assessment. However, at certain stages of schooling there are also national tests which must be taken by all children in state schools. Often informally known as 'SATs', the National Curriculum Tests are compulsory for children at the end of Year 2 and Year 6. Children in these year

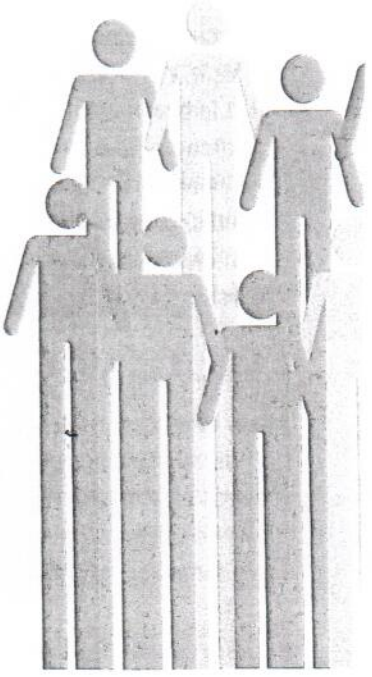
groups will undertake tests in Reading, Mathematics, and Grammar, Punctuation & Spelling. The tests will be sent away for marking, and results will be reported to schools and parents at the end of the year.

> The new National Curriculum Tests for children in Year 2 and Year 6 will take place each summer from 2016. Schools may also choose to have internal tests for other year groups around the same time.

Where previously these tests – and other teacher assessments – were graded in levels (normally numbering between Level 1 and Level 6 in primary school), from 2016 the tests will be reported as a scaled score, with a score of 100 representing the expected level for each age group. It will be up to teachers and schools to decide how to measure progress in the intervening years. Schools will then provide accompanying information to parents to explain how children are progressing – it makes attending those parents' evenings all the more important!

Using this guide

The content in this guide is set out – based on the National Curriculum – in year groups. However, all schools are different: some have mixed year groups, some may only have one or two classes overall. Consequently, schools are allowed to reorganise content between year groups as long as the material is covered by the end of primary school. Schools may therefore make some changes to the teaching sequence set out here – check your child's school's website for details on how they organise their curriculum.



Mathematics in Year 5

During the years of upper Key Stage 2 (Year 5 and Year 6), children use their knowledge of number bonds and multiplication tables to tackle more complex problems, including larger multiplication and division, and meeting new material. In Year 5, this includes more work on calculations with fractions and decimals, and using considerably larger numbers than previously.

Parent Tip

Much of the knowledge in Year 5 relies on number facts being easily recalled. For example, to find common factors or to make simple conversions, knowledge of multiplication tables is essential. Any practice at home to keep these skills sharp will certainly be appreciated by your child's class teacher!

Number and Place Value

- Recognise and use the place value of digits in numbers up to 1 million (1,000,000)
- Use negative numbers, including in contexts such as temperature
- Round any number to the nearest 10, 100, 1,000, 10,000 or 100,000
- Read Roman numerals, including years

Calculations

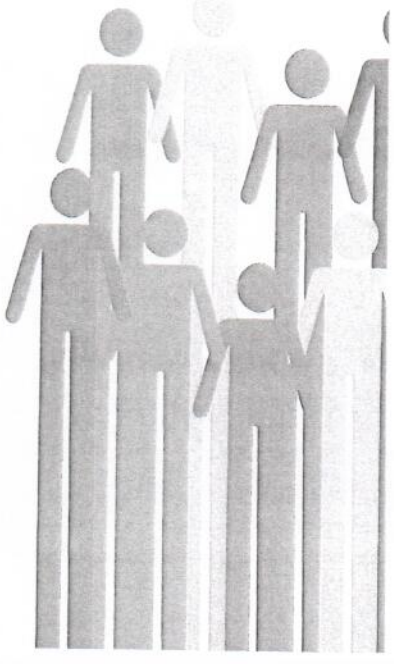
- Carry out addition and subtraction with numbers larger than four digits
- Use rounding to estimate calculations and check answers are of a reasonable size
- Find factors of multiples of numbers, including finding common factors of two numbers
- Know the prime numbers up to 19 by heart, and find primes up to 100
- Use the standard methods of long multiplication and short division
- Multiply and divide numbers mentally by 10, 100 or 1,000
- Recognise and use square numbers and cube numbers

Factors are numbers which multiply to make a product, for example 2 and 9 are factors of 18.
Common factors are numbers which are factors of two other numbers, for example 3 is a factor of both 6 and 18.

Fractions and Decimals

- Put fractions with the same denominator into size order, for example recognising that $\frac{3}{5}$ is larger than $\frac{2}{5}$
- Find equivalents of common fractions
- Convert between improper fractions and mixed numbers, for example recognising that $\frac{5}{4}$ is equal to $1\frac{1}{4}$
- Add and subtract simple fractions with related denominators, for example $\frac{2}{3} + \frac{1}{6} = \frac{5}{6}$
- Convert decimals to fractions, for example converting 0.71 to $\frac{71}{100}$
- Round decimals to the nearest tenth
- Put decimals with up to three decimal places into size order
- Begin to use the % symbol to relate to the 'number of parts per hundred'

In a fraction, the numerator is the number on top; the denominator is the number on the bottom.



Measurements

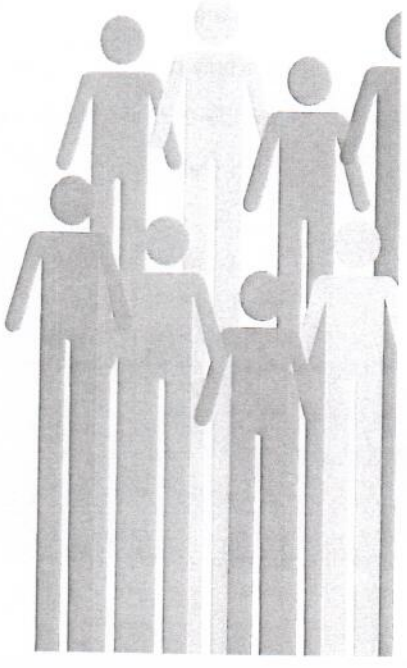
- Convert between metric units, such as centimetres to metres or grams to kilograms
- Use common approximate equivalences for imperial measures, such as 2.5cm ≈ 1 inch
- Calculate the area of rectangles using square centimetres or square metres
- Calculate the area of shapes made up of rectangles
- Estimate volume (in cm^3) and capacity (in ml)

Shape and Position

- Estimate and compare angles, and measure them to the nearest degree
- Know that angles on a straight line add up to 180°, and angles around a point add up to 360°
- Use reflection and translation to change the position of a shape

Graphs and Data

- Read and understand information presented in tables, including timetables
- Solve problems by finding information from a line graph



Mathematics in Year 6

By the end of Year 6, children are expected to be confident with the use of all four standard methods for written calculations, and to have secured their knowledge of the key number facts for the four operations. Their work will focus more on fractions, ratio, proportion and the introduction of algebra.

In May of Year 6, children will take an arithmetic test of thirty minutes, and two broader mathematics tests of forty minutes each. These will be sent away for marking, with the results coming back before the end of the year. Your child's teacher will also make an assessment of whether or not your child has reached the expected standard by the end of the Key Stage.

Parent Tip

Playing traditional games, such as battleships or even draughts and chess, is great for exploring coordinates and movements across the coordinate grid.

Number and Place Value

- Work with numbers to up ten million (10,000,000) including negative numbers
- Round any number to any required number of digits or magnitude

Calculations

- Use the standard method of long multiplication for calculations of four-digit numbers by two-digit numbers
- Use the standard method of long division for calculations of four-digit numbers by two-digit numbers
- Identify common factors, common multiples and prime numbers
- Carry out complex calculations according to the mathematical order of operations
- Solve complex problems using all four operations

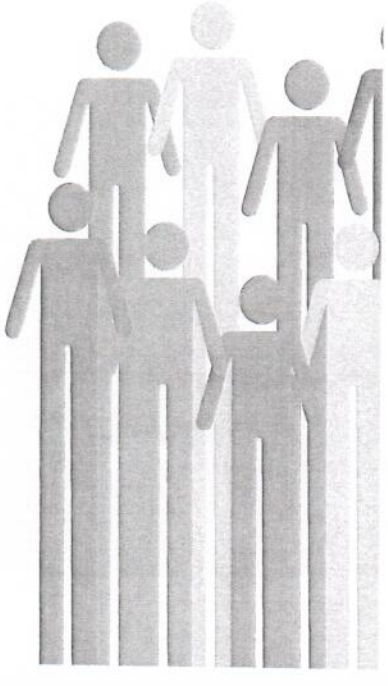
The mathematical order of operations requires that where calculations are written out in long statements, first calculations in brackets are completed, then any multiplication or division calculations, and finally any addition or subtraction. So, for example, the calculation 4 + 3 x (6 + 1) has a solution of 25, not 43 or 49.

Fractions and Decimals

- Use common factors to simplify fractions, or to add fractions with different denominators
- Place any group of fractions into size order
- Multiply pairs of fractions together
- Divide fractions by whole numbers, for example $\frac{1}{3} \div 2 = \frac{1}{6}$
- Use division to calculate the decimal equivalent of a fraction
- Know and use common equivalences between fractions, decimals and percentages, such as $\frac{1}{2} = 0.5 = 50\%$

Ratio and Proportion

- Find percentages of quantities, such as 15% of £360
- Use ratio to explain relationships and solve problems
- Use simple scale factors for drawings, shapes or diagrams



Ratio is represented using the colon symbol. For example, if £100 is shared in a ratio of 1:3 between two people, then the first person receives £25 (one part), with the other receiving £75 (three parts).

Algebra

- Use simple formulae
- Describe sequences of numbers where the increase between values is the same each time
- Solve missing number problems using algebra
- Find possible solutions to problems with two variables, such as a + b = 10

Measurements

- Convert between any metric units and smaller or larger units of the same measure
- Convert between miles and kilometres
- Use a given formula to find the area of a triangle or parallelogram

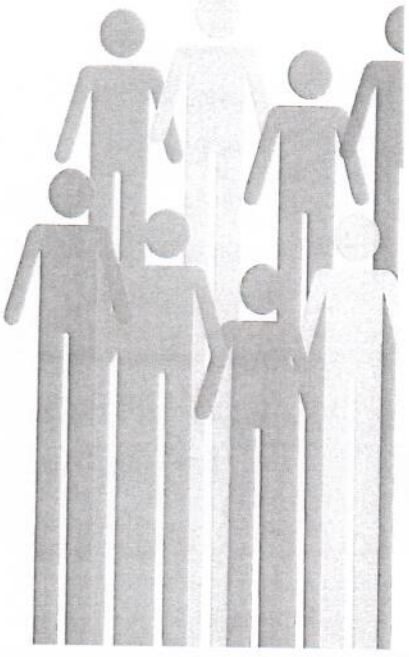
Shape and Position

- Draw 2-d shapes using given sizes and angles
- Use knowledge of 2-d shapes to find missing angles in triangles, quadrilaterals and other regular shapes
- Name and label the radius, diameter and circumference of a circle
- Find missing angles in problems where lines meet at a point or on a straight line
- Use a standard grid of coordinates including negative values

Graphs and Data

- Construct and understand pie charts and line graphs
- Calculate the mean average of a set of data

Mean average is calculated by adding up all the values and dividing by the number of items. For example, the mean average of 3, 5, 8, 9 and 10 is 7 (3 + 5 + 8 + 9 + 10 = 35, then 35 ÷ 5 = 7)



English in Year 5 and Year 6

In upper Key Stage 2, your child will increasingly meet a wider range of texts and types of writing, and will be encouraged to use their skills in a broader range of contexts. Their knowledge of grammar will also increase as they prepare for the National Curriculum Tests to be taken in the summer term of Year 6.

Year 6 children will take a reading test of about one hour, a grammar and punctuation test of about forty-five minutes, and a spelling test of twenty words. These will be sent away for marking, with the results coming back before the end of the year. Your child's teacher will also make an assessment of whether or not your child has reached the expected standard by the end of the Key Stage.

Parent Tip

As children get older, they will increasingly take responsibility for their own work and homework tasks. That's not to say that parents can't help though. Encourage your child to work independently on their homework, but also take the opportunity to discuss it with them and to have them explain their understanding to you.

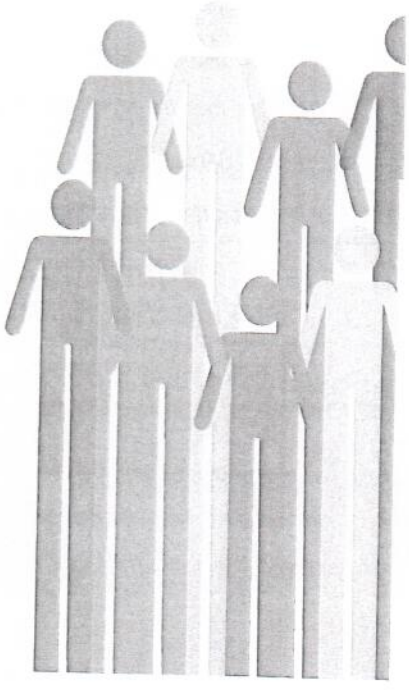
Speaking and Listening

The Spoken Language objectives are set out for the whole of primary school, and teachers will cover many of them every year as children's spoken language skills develop. In Years 5 and 6, some focuses may include:

- Speak clearly in a range of contexts, using Standard English where appropriate
- Monitor the reactions of listeners and react accordingly
- Consider different viewpoints, listening to others and responding with relevant views
- Use appropriate language, tone and vocabulary for different purposes

Reading Skills

- Read a wide range of fiction, non-fiction, poetry, plays and reference books
- Learn a range of poetry by heart
- Perform plays and poems using tone, volume and intonation to convey meaning
- Use knowledge of spelling patterns and related words to read aloud and understand new words
- Make comparisons between different books, or parts of the same book
- Read a range of modern fiction, classic fiction and books from other cultures and traditions
- Identify and discuss themes and conventions across a wide range of writing
- Discuss understanding of texts, including exploring the meaning of words in context
- Ask questions to improve understanding of texts
- Summarise ideas drawn from more than one paragraph, identifying key details
- Predict future events from details either written in a text or by 'reading between the lines'
- Identify how language, structure and presentation contribute to meaning
- Discuss how authors use language, including figurative language, to affect the reader
- Make book recommendations, giving reasons for choices
- Participate in discussions about books, building on and challenging ideas
- Explain and discuss understanding of reading
- Participate in formal presentations and debates about reading



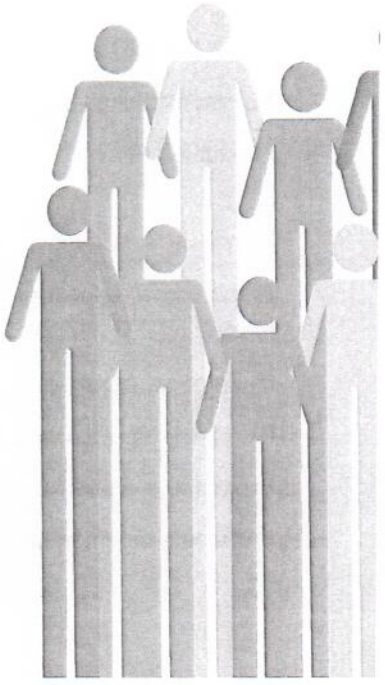
- Provide reasoned justifications for views

Figurative language includes metaphorical phrases such as 'raining cats and dogs' or 'an iron fist', as well as using language to convey meaning, for example by describing the Sun as 'gazing down' upon a scene.

Themes & Conventions
As children's experience of a range of texts broadens, they may begin to notice conventions, such as the use of first person for diary-writing, or themes such as heroism or quests.

Writing Skills

- Write with increasing speed, maintaining legibility and style
- Spell some words with silent letters, such as knight and solemn
- Recognise and use spellings for homophones and other often-confused words from the Y5/6 list
- Use a dictionary to check spelling and meaning
- Identify the audience and purpose before writing, and adapt accordingly
- Select appropriate grammar and vocabulary to change or enhance meaning
- Develop setting, atmosphere and character, including through dialogue
- Write a summary of longer passages of writing
- Use a range of cohesive devices
- Use advanced organisational and presentational devices, such as bullet points
- Use the correct tense consistently throughout a piece of writing
- Ensure correct subject and verb agreement
- Perform compositions using appropriate intonation, volume and movement
- Use a thesaurus
- Use expanded noun phrases to convey complicated information concisely
- Use modal verbs or adverbs to indicate degrees of possibility
- Use relative clauses
- Recognise vocabulary and structures that are appropriate for formal use
- Use passive verbs to affect the presentation of information
- Use the perfect form of verbs to mark relationships of time and cause
- Recognise the difference in informal and formal language
- Use grammatical connections and adverbials for cohesion
- Use ellipses, commas, brackets and dashes in writing
- Use hyphens to avoid ambiguity
- Use semi-colons, colons and dashes between independent clauses
- Use a colon to introduce a list
- Punctuate bullet points consistently

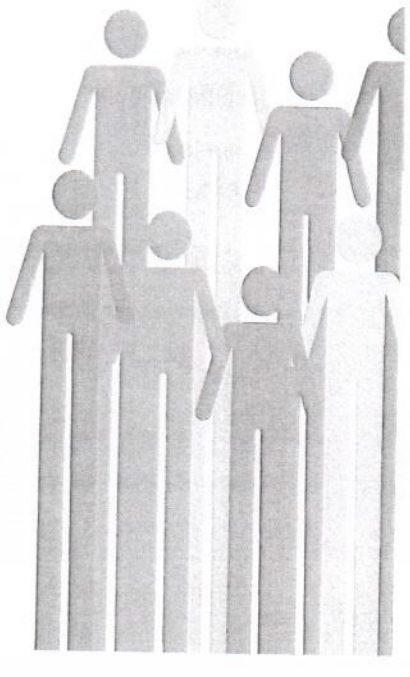


Cohesive devices are words or phrases used to link different parts of writing together. These may be pronouns such as 'he' or 'it' to avoid repeating a name, or phrases such as 'After that...' or 'Meanwhile' to guide the reader through the text.

Grammar Help

For many parents, the grammatical terminology used in schools may not be familiar. Here are some useful reminders of some of the terms used:

- Noun phrase: a group of words which takes the place of a single noun. Example: The big brown dog with the fluffy ears.
- Modal verb: a verb that indicates possibility. These are often used alongside other verbs. Example: will, may, should, can.
- Relative clause: a clause which adds extra information or detail. Example: The boy who was holding the golden ticket won the prize.
- Passive verb: a form of verb that implies an action being done to, rather than by, the subject. Example: The boy was bitten by the dog.
- Perfect form: a form of verb that implies that an action is completed. Example: The boy has walked home.



Science in Year 5

As children get older, they begin to meet more abstract concepts in science – things which are not so easily tested in the classroom, such as the bodies of the solar system, or changes of state. They will continue to carry out experiments but may also use more secondary resources for research or investigation.

Parent Tip
Plenty of exciting experiments can take place at home looking at reversible and irreversible changes. Try searching online for the 'vinegar bomb' experiment, or the now-famous 'Coke and Mentos' experiment.

Scientific Investigation

Investigation work should form part of the broader science curriculum. During Year 5, some of the skills your child might focus on include:

- Plan different types of scientific investigation, including controlling variables
- Take measurements with increasing accuracy and precision
- Record data and results using diagrams, labels, keys, tables and graphs
- Use test results to make predictions and to set up more testing
- Identify the evidence that has been used to support or refute ideas

Living Things and their Habitats

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- Describe the life processes of reproduction in some plants and animals

Life cycles include different stages for the main vertebrate groups, such as eggs, larvae and pupae. These can be seen in tadpoles and frogs, caterpillars and butterflies, and of course the chicken and the egg.

Animals including Humans

- Describe the changes as humans develop to old age, including puberty

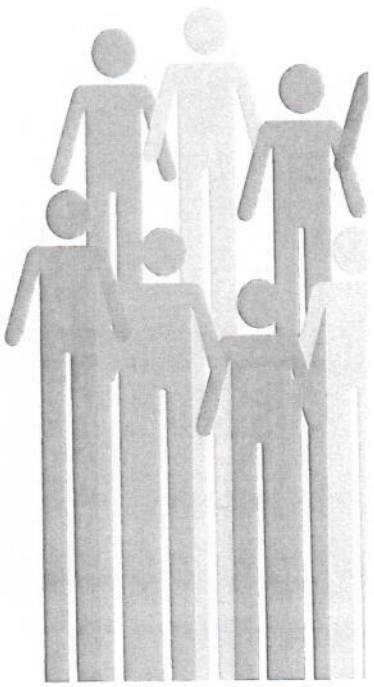
Properties and Changes of Materials

- Compare the various properties of materials such as hardness, solubility and conductivity
- Use knowledge of solids, liquids and gases to separate mixtures and solutions through filtering or evaporation
- Know that dissolving, mixing and changes of state are reversible changes
- Know that some changes cannot be reversed, such as burning, rusting or chemical reactions

Earth and Space

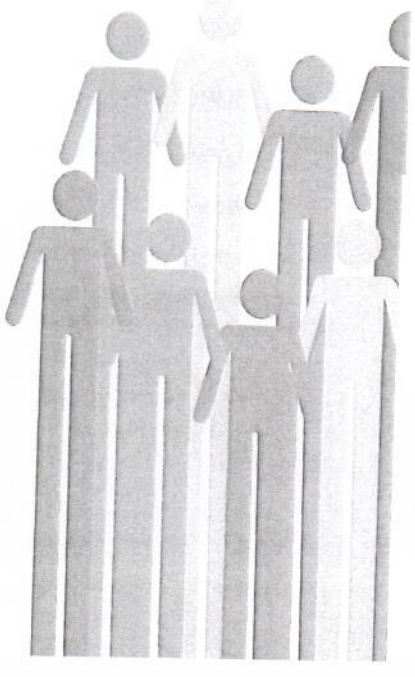
- Describe the movement of the planets, including Earth, around the Sun
- Describe the movement of the Moon around the Earth
- Use these ideas to explain how day and night occur, and why the Sun appears to move across the sky

Since 2006, scientists have defined Pluto as only a dwarf planet. Consequently, children are now taught that there are only eight planets orbiting the Sun (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune), although many will also explain the history of Pluto's past.



Forces

- Explain that gravity is a force which acts on objects pulling them towards the Earth
- Identify the effects of air resistance, water resistance and friction
- Recognise that some mechanisms, such as levers, pulleys and gears, can be used to increase the work of a force



Science in Year 6

Again in Year 6, many of the scientific concepts that children meet are more abstract, such as the study of evolution, or the behaviour of light. There are still plenty of opportunities for investigation, and also to find out about the work of some great scientists of today and the past.

There are no statutory tests for students in Science at Key Stage 2, although a very small number of children from any given school may be selected to be part of the bi-annual science sample testing. This involves taking three short tests of about twenty-five minutes each. The results of these tests are not shared with parents or schools, but are used to get a sense of the national picture.

Scientific Investigation

Investigation work should form part of the broader science curriculum. During Year 6, some of the skills your child might focus on include:

- Plan a range of scientific investigations and managing the variables effectively
- Take precise measurements, and repeat tests where appropriate to improve the validity of the results
- Present results using tables, scatter graphs, line graphs and other diagrams
- Explain the conclusions drawn from results, including their limitations

Living Things and their Habitats

- Describe how living things are classified into groups, including micro-organisms
- Give reasons for the classification of plants and of animals according to their characteristics

At this age, invertebrate animals can be grouped into categories such as insects, spiders, snails and worms.

Animals including Humans

- Know the functions of the main parts of the circulatory system such as the heart, lungs, blood vessels and blood
- Describe how nutrients and water are transported within animals
- Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function

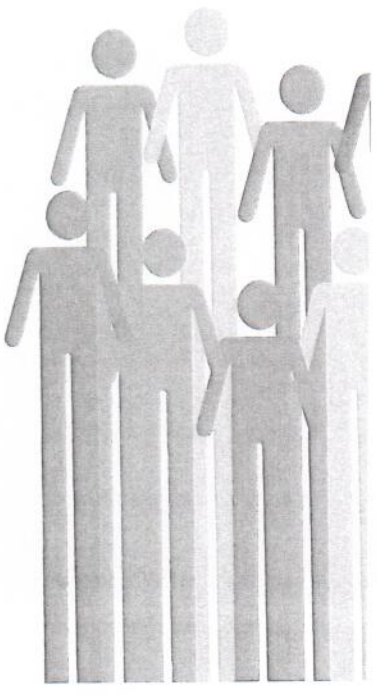
Evolution and Inheritance

- Recognise that fossils provide information about life on Earth millions of years ago
- Understand that offspring are not normally identical to their parents
- Identify that plants and animals are adapted to their environments, and that this adaptation leads to evolution over long periods of time

Evolution is not a planned process of adaptation, but rather the unintended result of more random changes which led to animals being better-suited to the environments in which they lived.

Parent Tip

Conversations about evolution and inheritance often lead to interesting discussions at home. Some traits which are inherited are not always passed on, such as hair or eye colour. Interestingly, you can also compare whether members of your family have attached or detached earlobes, or whether they can roll their tongues.

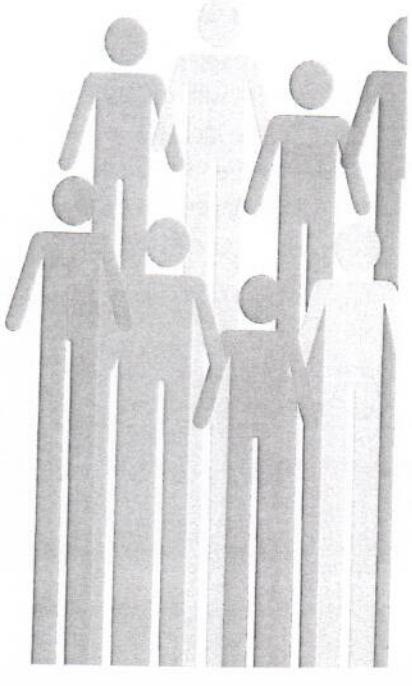


Light

- Recognise that light appears to travel in straight lines
- Understand that we see things because light is reflected off objects and into the eye
- Explain how shadows are formed

Electricity

- Compare the variation in performance of bulbs and buzzers by changing the number of cells in a circuit
- Use the recognised scientific symbols to draw a simple circuit diagram



The Foundation Subjects

At primary school, English, Maths and Science are the core subjects which make up the bulk of the timetable. That said, the other foundation subjects play a key part in providing a broad and balanced curriculum. All eight of these subjects are a compulsory part of the National Curriculum. In addition, all schools are required to include some Religious Education in their broader curriculum, although the content of this is agreed locally.

Here is a very brief outline of what will be covered in the foundation subjects during primary school:

Art

Schools will be largely free to design their own curriculum in Art, while providing a broad experience for their students. Children will explore a range of different techniques such as drawing, painting and sculpture, and will use a variety of materials, from pencil and paint to charcoal and clay, to create their own art pieces. In addition, during Key Stage 2, children will study the works of some great artists, architects and designers from history.

Computing

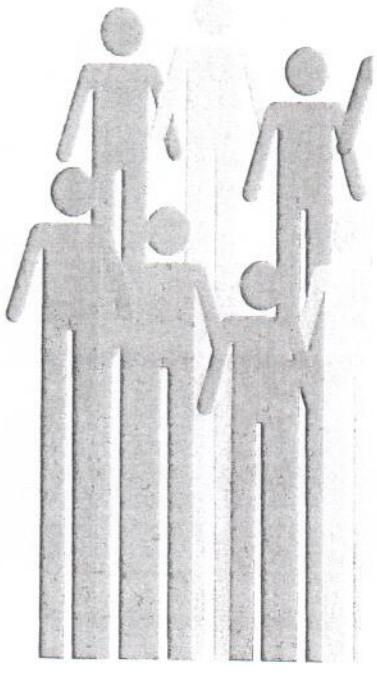
There are three main strands of the new Computing curriculum: information technology, digital literacy and computer science.

Information technology is about the use of computers for functional purposes, such as collecting and presenting information, or using search technology. Digital literacy is about the safe and responsible use of technology, including recognising its advantages for collaboration or communication. Finally, computer science will introduce children of all ages to understanding how computers and networks work. It will also give all children the opportunity to learn basic computer programming, from simple floor robots in Years 1 and 2, right up to creating on-screen computer games and programmes by Year 6. Many schools will use programming software which is freely available online, such as Scratch or Kodu.

All schools will also include regular teaching of e-safety to ensure that children feel confident when using computers and the Internet, and know what to do if they come across something either inappropriate or uncomfortable. Many schools will also invite parents to work with them on this aspect of the curriculum.

Design and Technology

This subject includes cooking, which will be taught in all primary schools from 2014, with children finding out about a healthy diet and preparing simple meals. It also includes the more traditional design elements in which children will design, make and evaluate products while learning to use a range of tools and techniques for construction. There may also be some cross-over with Science here as children incorporate levers, pulleys or electrical circuits into their designs for finished products.



Geography

Across primary school, children will find out about different places in the UK, Europe and the Americas through studying small regions in each, and comparing these to other areas, including their own locality.

In Key Stage 1, children will learn the names of the continents and oceans as well as the names of the four home nations and their respective capital cities. They will use the four main compass directions and simple maps and photographs to explore the local area.

In Key Stage 2, the children will locate the countries of the world, focussing particularly on Europe and the Americas, as well as naming the counties, regions and major cities of the United Kingdom. They will begin to explore geographical features such as volcanoes and tectonic plates, as well as features of human geography such as trade links and land use. They will also learn to use grid references on Ordnance Survey maps to describe locations.

History

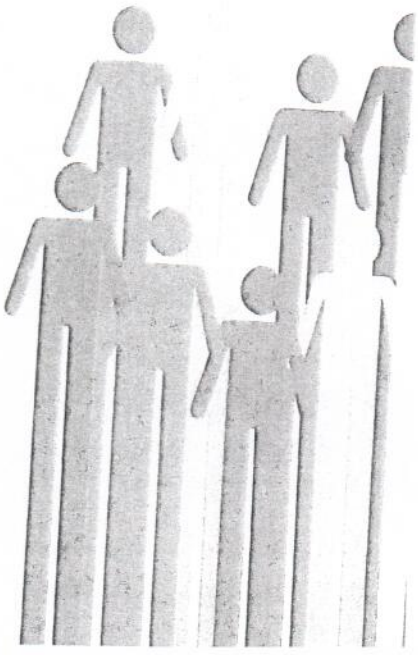
In Key Stage 1, the focus of history is very much on locally significant events or events within their own memories, as well as key events of great significance such as Bonfire Night. In addition, children will find out about important historical people and events, such as Florence Nightingale or The Great Fire of London.

In Key Stage 2, there are nine main areas of study that are required, some of which have optional strands. The first four are units relating to British history and are intended to begin the development of a clear chronological understanding. In many schools these will be taught in chronological order.

1. Britain in the Stone, Bronze and Iron Ages
2. Roman Britain
3. Anglo-Saxons and Scots in Britain
4. Anglo-Saxons and Vikings
5. Local history
6. A study of a period after 1066 of the school's choice
7. Ancient Greece
8. A choice from Ancient Egypt, Ancient Sumer, Ancient Egypt, or the Shang Dynasty of Ancient China
9. A choice from 10th-century early Islamic civilisation, Mayan civilisation or Benin in West Africa

Languages

For the first time, foreign languages will be compulsory in schools for children in Key Stage 2 (Years 3 to 6). Schools can choose any language to study, although they should bear in mind the languages available in partner secondary schools. Over the course of their four years in Key Stage 2, children will be expected to make good progress in the main language chosen, learning to ask and answer questions, present ideas to an audience both in speaking and writing, read a range of words, phrases and sentences, and write simple phrases, sentences and descriptions. If the school chooses a modern language, such as French or Spanish, then children will also learn about the appropriate intonation and pronunciation of the language.



Music

Over the course of primary school, children will listen to and perform a range of music. In the first years of schooling this will often include singing songs and rhymes, and playing untuned instruments such as tambourines or rainmaker sticks.

In Key Stage 2, children will perform pieces both alone and as part of a group using their own voice and a range of musical instruments, including those with tuning such as glockenspiels or keyboards. They will both improvise and compose pieces using their knowledge of the different dimensions of music such as rhythm and pitch. During the later years they will also begin to use musical notation, and to learn about the history of music.

Physical Education

Physical Education lessons will continue to include a range of individual disciplines such as dance and athletics, with team sports and games. Through these sports, children should learn the skills of both cooperation and competition.

During Key Stage 2, the range of games and sports taught will be broader, and the children will also take part in outdoor and adventurous activities such as orienteering. They will perform dances, take part in athletics and gymnastics, and attempt to achieve personal bests in various activities.

In addition, all children should learn to swim at some point during their primary school career.