

## Science

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• ask relevant questions and using different types of scientific enquiries to answer them				
• set up simple practical enquiries, comparative and fair tests				
• making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers				
• gather, record, classify and present data in a variety of ways to help in answering questions				
• record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables				
• report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions				
• use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions				
• identify differences, similarities or changes related to simple scientific ideas and processes				
• use straightforward scientific evidence to answer questions or to support their findings.				
• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers				
• explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant f investigate the way in which water is transported within plants				
• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal				
• identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat				
• identify that humans and some other animals have skeletons and muscles for support, protection and movement				
• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties				
• describe in simple terms how fossils are formed when things that have lived are trapped within rock				
• recognise that soils are made from rocks and organic matter				
• recognise that they need light in order to see things and that dark is the absence of light				
• notice that light is reflected from surfaces				
• recognise that light from the sun can be dangerous and that there are ways to protect their eyes				
• recognise that shadows are formed when the light from a light source is blocked by a solid object				
• find patterns in the way that the size of shadows change				
• compare how things move on different surfaces				
• notice that some forces need contact between two objects, but magnetic forces can act at a distance				

• observe how magnets attract or repel each other and attract some materials and not others				
• compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials				
• describe magnets as having two poles x predict whether two magnets will attract or repel each other, depending on which poles are facing				
• recognise that living things can be grouped in a variety of ways				
• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment				
• recognise that environments can change and that this can sometimes pose dangers to living things				
• describe the simple functions of the basic parts of the digestive system in humans				
• identify the different types of teeth in humans and their simple functions				
• construct and interpret a variety of food chains, identifying producers, predators and prey				
• compare and group materials together, according to whether they are solids, liquids or gases				
• observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)				
• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature				
• identify how sounds are made, associating some of them with something vibrating				
• recognise that vibrations from sounds travel through a medium to the ear				
• find patterns between the pitch of a sound and features of the object that produced it				
• find patterns between the volume of a sound and the strength of the vibrations that produced it				
• recognise that sounds get fainter as the distance from the sound source increases.				
• identify common appliances that run on electricity				
• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers				
• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery				
• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit				
• recognise some common conductors and insulators, and associate metals with being good conductors				
• plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary				
• take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate				
• record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs				
• use test results to make predictions to set up further comparative and fair tests				
• report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations				

• identify scientific evidence that has been used to support or refute ideas or arguments				
• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird				
• describe the life process of reproduction in some plants and animals.				
• describe the changes as humans develop to old age				
• compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets				
• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution				
• use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating				
• give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic				
• demonstrate that dissolving, mixing and changes of state are reversible changes				
• explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including				
• describe the movement of the Earth, and other planets, relative to the Sun in the solar system				
• describe the movement of the Moon relative to the Earth				
• describe the Sun, Earth and Moon as approximately spherical bodies				
• use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky				
• explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object				
• identify the effects of air resistance, water resistance and friction, that act between moving surfaces				
• recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect				
• describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals				
• give reasons for classifying plants and animals based on specific characteristics				
• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood				
• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function				
• describe the ways in which nutrients and water are transported within animals, including humans				
• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago				
• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents				
• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution				
• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit				

• compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches				
• use recognised symbols when representing a simple circuit in a diagram				
• recognise that light appears to travel in straight lines				
• use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye				
• explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes				

### Art and Design

Pupils should be taught:	Year 3	Year 4	Year 5	Year 6
• to create sketch books to record their observations and use them to review and revisit ideas				
• to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]				
• about great artists, architects and designers in history.				

### Computing

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts				
• use sequence, selection, and repetition in programs; work with variables and various forms of input and output				
• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs				
• understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration				
• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content				
• select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information				
• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.				

## Design and Technology

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups				
• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design				
• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately				
• select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities				
• investigate and analyse a range of existing products f evaluate their ideas and products against their own design criteria and consider the views of others to improve their work				
• understand how key events and individuals in design and technology have helped shape the world				
• apply their understanding of how to strengthen, stiffen and reinforce more complex structures				
• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]				
• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]				
• apply their understanding of computing to program, monitor and control their products - CLARIFICATION				

## Cooking and Nutrition

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• understand and apply the principles of a healthy and varied diet				
• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques				
• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.				

## Geography

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities				

<ul style="list-style-type: none"> <li>name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time</li> </ul>				
<ul style="list-style-type: none"> <li>identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)</li> </ul>				
<ul style="list-style-type: none"> <li>understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America</li> </ul>				
<ul style="list-style-type: none"> <li>recognise physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle</li> </ul>				
<ul style="list-style-type: none"> <li>recognise human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water</li> </ul>				
<ul style="list-style-type: none"> <li>use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied</li> </ul>				
<ul style="list-style-type: none"> <li>use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world</li> </ul>				
<ul style="list-style-type: none"> <li>use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies.</li> </ul>				

## History

Pupils should be taught:	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>the Viking and Anglo-Saxon struggle for the Kingdom of England to the time of Edward the Confessor</li> </ul>				
<ul style="list-style-type: none"> <li>a local history study</li> </ul>				
<ul style="list-style-type: none"> <li>a study of an aspect or theme in British history that extends pupils' chronological knowledge beyond 1066</li> </ul>				
<ul style="list-style-type: none"> <li>the achievements of the earliest civilizations – an overview of where and when the first civilizations appeared and a depth study of one of the following: Ancient Sumer; The Indus Valley; Ancient Egypt; The Shang Dynasty of Ancient China</li> </ul>				
<ul style="list-style-type: none"> <li>Ancient Greece – a study of Greek life and achievements and their influence on the western world</li> </ul>				
<ul style="list-style-type: none"> <li>a non-European society that provides contrasts with British history – one study chosen from: early Islamic civilization, including a study of Baghdad c. AD 900; Mayan civilization c. AD 900; Benin (West Africa) c. AD 900-1300.</li> </ul>				

## Music

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression				
• improvise and compose music for a range of purposes using the inter-related dimensions of music				
• listen with attention to detail and recall sounds with increasing aural memory				
• use and understand staff and other musical notations				
• appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians				
• develop an understanding of the history of music.				

## PE

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• swim competently, confidently and proficiently over a distance of at least 25 metres				
• use a range of strokes effectively [for example, front crawl, backstroke and breaststroke]				
• perform safe self-rescue in different water-based situations				
• use running, jumping, throwing and catching in isolation and in combination				
• play competitive games, modified where appropriate (for example, badminton, basketball, cricket, football, hockey, netball, rounders and tennis), and apply basic principles suitable for attacking and defending				
• develop flexibility, strength, technique, control and balance [for example, through athletics and gymnastics]				
• perform dances using a range of movement patterns				
• take part in outdoor and adventurous activity challenges both individually and within a team				
• compare their performances with previous ones and demonstrate improvement to achieve their personal best.				

## Language

Pupils should be taught to:	Year 3	Year 4	Year 5	Year 6
• listen attentively to spoken language and show understanding by joining in and responding				
• explore the patterns and sounds of language through songs and rhymes and link the spelling, sound and meaning of words				
• engage in conversations; ask and answer questions; express opinions and respond to those of others; seek clarification and help*				
• speak in sentences, using familiar vocabulary, phrases and basic language structures				

• develop accurate pronunciation and intonation so that others understand when they are reading aloud or using familiar words and phrases*				
• present ideas and information orally to a range of audiences*				
• read carefully and show understanding of words, phrases and simple writing				
• appreciate stories, songs, poems and rhymes in the language				
• broaden their vocabulary and develop their ability to understand new words that are introduced into familiar written material, including through using a dictionary				
• write phrases from memory, and adapt these to create new sentences, to express ideas clearly				
• describe people, places, things and actions orally* and in writing				
• understand basic grammar appropriate to the language being studied, including (where relevant): feminine, masculine and neuter forms and the conjugation of high-frequency verbs; key features and patterns of the language; how to apply these, for instance, to build sentences; and how these differ from or are similar to English.				