National Curriculum 2014 - SCIENCE

OBJECTIVES and CHILD SPEAK TARGETS

SCIENCE Key Stage 1 Year 1,2

Key Stage	Strand	Objective	Child Speak Target
KS 1 Y1,2	Working Scientifically		
KS 1 Y1,2	Working Scientifically	Asking simple questions and recognising that they can be answered in different ways.	*I can ask simple questions and know that there can be more than one answer.*
KS 1 Y1,2	Working Scientifically	Observing closely, using simple equipment.	*I can use simple equipment to look very closely at things so I can understand them better.*
KS 1 Y1,2	Working Scientifically	Performing simple tests.	*I can test things in simple ways.*
KS 1 Y1,2	Working Scientifically	Identifying and classifying.	*I can identify different things in Science and can group similar ones together.*
KS 1 Y1,2	Working Scientifically	Using their observations and ideas to suggest answers to questions.	*I use what I have seen and think to help me when I answer questions.*
KS 1 Y1,2	Working Scientifically	Gathering and recording data to help in answering questions.	*I can find information and write it down which helps me when I have to answer questions.*

SCIENCE Key Stage 1 Year 1

Key Stage	Strand	Objective	Child Speak Target
KS 1 Y1	Plants		
KS 1 Y1	Plants	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	*I can name some plants that I often see in the garden and countryside as well as some trees that drop their leaves and some that don't.*
KS 1 Y1	Plants	Identify and describe the basic structure of a variety of common flowering plants, including trees.	*I understand the inside of some plants and trees and how they grow which I can explain to others.*
KS 1 Y1	Animals		
KS 1 Y1	Animals	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.	*I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.*
KS 1 Y1	Animals	Identify and name a variety of common animals that are carnivores, herbivores and omnivores.	*I know the names of animals I often see which eat meat, others that eat vegetables and some that eat both.*
KS 1 Y1	Animals	Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	*I can describe the different shape and form of a number of animals that I often see including my pets.*
KS 1 Y1	Animals	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	*I know the parts of the human body, can draw a picture of it and name the parts. I know which part of the body lets me hear, taste and smell.*
KS 1 Y1	Everyday Materials		
KS 1 Y1	Everyday Materials	Distinguish between an object and the material from which it is made.	*I know that the name of an object and name the material it is made from will be different.*
KS 1 Y1	Everyday Materials	Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.	*I know the name of some materials I see everyday, including wood, plastic, glass, metal, water, and rock.*
KS 1 Y1	Everyday Materials	Describe the simple physical properties of a variety of everyday materials.	*I can describe the simple physical properties of a variety of everyday materials.*
KS 1 Y1	Everyday Materials	Compare and group together a variety of everyday materials on the basis of their simple physical properties.	*I can compare the simple physical properties of a variety of everyday materials and group similar ones together.*
KS 1 Y1	Seasons Changes		
KS 1 Y1	Seasons Changes	Observe changes across the four seasons.	*I notice and can describe the changes that happen from Spring to Summer to Autumn and into Winter.*
KS 1 Y1	Seasons Changes	Observe and describe weather associated with the seasons and how day length varies.	*I know what weather we might find in spring, summer, autumn and winter and I know winter days are shorter than summer days.*

SCIENCE Key Stage 1 Year 2

Key Stage	Strand	Objective	Child Speak Target
KS 1 Y2	Living Things Habitats		
KS 1 Y2	Living Things Habitats	Explore and compare the differences between things that are living, dead, and things that have never been alive.	*I can explore and compare the differences between things that are living, dead, and things that have never been alive.*
KS 1 Y2	Living Things Habitats	Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.	*I can identify that most living things live in places which suit their basic needs. I can describe how different kinds of animals and plants, need different types of places to live and that they depend on each other.*
KS 1 Y2	Living Things Habitats	Identify and name a variety of plants and animals in their habitats, including micro-habitats.	*I can identify and name a variety of plants and animals in their habitats, including micro-habitats.*
KS 1 Y2	Living Things Habitats	Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	*I understand the simple food chain and can identify and name different sources of food. I can describe how animals obtain their food from plants and other animals.*
KS 1 Y2	Plants		
KS 1 Y2	Plants	Observe and describe how seeds and bulbs grow into mature plants.	*I know and can describe how seeds and bulbs grow into mature plants.*
KS 1 Y2	Plants	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	*I know that plants need water, light and a suitable temperature to grow and stay healthy.*
KS 1 Y2	Animals		
KS 1 Y2	Animals	Notice that animals, including humans, have offspring which grow into adults.	*I know that animals, including humans, have babies which grow into adults.*
KS 1 Y2	Animals	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).	*I know that animals, including humans, need water, food and air to survive.*
KS 1 Y2	Animals	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	*I know that exercise, eating the right amounts of different types of food, and hygiene are all important for humans.*
KS 1 Y2	Everyday Materials		
KS 1 Y2	Everyday Materials	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	*I know which everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard are suitable for particular uses.*
KS 1 Y2	Everyday Materials	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	*I know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.*

SCIENCE Key Stage 2 Year 3,4

Key Stage	Strand	Objective	Child Speak Target
KS 2 Y3,4	Working Scientifically		
KS 2 Y3,4	Working Scientifically	Asking relevant questions and using different types of scientific enquiries to answer them.	*I can ask relevant questions and use different types of scientific enquiries to answer them.*
KS 2 Y3,4	Working Scientifically	Setting up simple practical enquiries, comparative and fair tests.	*I can set up a practical fair test experiment to answer a scientific question.*
KS 2 Y3,4	Working Scientifically	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	*I can make careful observations and record accurate measurements (for example in mm or g) using equipment or a data logger.*
KS 2 Y3,4	Working Scientifically	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	*I can gather the data I need to answer a scientific question and then present them in an appropriate way (such as a table, grid or graph).*
KS 2 Y3,4	Working Scientifically	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	*I can record my findings in labelled diagrams, keys, bar charts or tables.*
KS 2 Y3,4	Working Scientifically	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	*I can report my conclusion from the data I have measured.*
KS 2 Y3,4	Working Scientifically	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	*I use my results to draw a conclusion and make predictions or suggest improvements for answering a different question or repeating my test.*
KS 2 Y3,4	Working Scientifically	Identifying differences, similarities or changes related to simple scientific ideas and processes.	*I can identify differences, similarities or changes when making comparisons in my experiments or scientific learning.*
KS 2 Y3,4	Working Scientifically	Using straightforward scientific evidence to answer questions or to support their findings.	*I support my answers or conclusions by pointing out the scientific evidence.*

SCIENCE Key Stage 2 Year 3

Key Stage	Strand	Objective	Child Speak Target
KS 2 Y3	Plants		
KS 2 Y3	Plants	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.	*I know the different parts of a flowering plant (roots, stem/trunk, leaves and flowers) and what each part does.*
KS 2 Y3	Plants	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.	*I know what a plant needs to live and grow, and that some plants need more or less air, light, water, nutrients from the soil, and room to grow, depending on the plant variety.*
KS 2 Y3	Plants	Investigate the way in which water is transported within plants.	*I can tell you how water is transported in a plant.*
KS 2 Y3	Plants	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	*I know that a flower is important in the life cycle of a plant as the flower helps the plant to pollenate, create a seed and then disperse the seed.*
KS 2 Y3	Animals		
KS 2 Y3	Animals	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.	*I know that animals (including humans) need the right types of nutrition and they get nutrition from what they eat.*
KS 2 Y3	Animals	Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	*I know that humans and some other animals have skeletons and muscles for support, protection and movement.*
KS 2 Y3	Rocks		
KS 2 Y3	Rocks	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	*I can group and compare different rock types based on their appearance and properties.*
KS 2 Y3	Rocks	Describe in simple terms how fossils are formed when things that have lived are trapped within rock.	*I know how fossils and formed.*
KS 2 Y3	Rocks	Recognise that soils are made from rocks and organic matter.	*I know that soil is made from rocks and rotting materials such as leaves or plants.*
KS 2 Y3	Light		
KS 2 Y3	Light	Recognise that they need light in order to see things and that dark is the absence of light.	*I understand that we need light to see things around us, and that if there is no light, then we have darkness.*
KS 2 Y3	Light	Notice that light is reflected from surfaces.	*I know that light is reflected from surfaces.*
KS 2 Y3	Light	Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.	*I know that light direct from the sun can be dangerous and our eyes should be protected.*
KS 2 Y3	Light	Recognise that shadows are formed when the light from a light source is blocked by a solid object.	*I know that a shadow is made when light is blocked by an object.*

KS 2 Y3	Light	Find patterns in the way that the size of shadows change.	*I can describe the pattern in the way a shadow changes when I move the object or the light.*
KS 2 Y3	Forces		
KS 2 Y3	Forces	Compare how things move on different surfaces.	*I can describe how the same object may move differently on different surfaces - such as on a road, on ice, on a table or an the carpet.*
KS 2 Y3	Forces	Notice that some forces need contact between two objects, but magnetic forces can act at a distance.	*I know that many forces need contact between objects to pass on a force (such as pushing or pulling an object), but some forces (such as magnetic forces or gravity) do not need to have contact.*
KS 2 Y3	Forces	Observe how magnets attract or repel each other and attract some materials and not others.	*I know that magnets can attract and repel each other and that magnets attract some materials but not all materials.*
KS 2 Y3	Forces	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.	*I can group together materials that are attracted by a magnet and others that are not. I know some materials that are always attracted to magnets.*
KS 2 Y3	Forces	Describe magnets as having two poles.	*I know that magnets have two poles.*
KS 2 Y3	Forces	Predict whether two magnets will attract or repel each other, depending on which poles are facing.	*I know that like poles on a magnet repel and opposite poles on magnets attract.*

SCIENCE Key Stage 2 Year 4

Key Stage	Strand	Objective	Child Speak Target
KS 2 Y4	Living Things Habitats		
KS 2 Y4	Living Things Habitats	Recognise that living things can be grouped in a variety of ways.	*I can group living things in many ways - such as their size, their appearance, their habitat or needs.*
KS 2 Y4	Living Things Habitats	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.	*I know how to use a classification key in science to identify an animal or plant.*
KS 2 Y4	Living Things Habitats	Recognise that environments can change and that this can sometimes pose dangers to living things.	*I know that an environment may change over time, and this can be dangerous for the living things in the environment.*
KS 2 Y4	Animals		
KS 2 Y4	Animals	Describe the simple functions of the basic parts of the digestive system in humans.	*I can describe some of the ways food is digested in the digestive system in humans.*
KS 2 Y4	Animals	Identify the different types of teeth in humans and their simple functions.	*I know humans have different types of teeth and how each tooth type has a different job when eating.*
KS 2 Y4	Animals	Construct and interpret a variety of food chains, identifying producers, predators and prey.	*When I build a food chain, I can tell you what are the producers, predators and prey.*
KS 2 Y4	States of Matter		
KS 2 Y4	States of Matter	Compare and group materials together, according to whether they are solids, liquids or gases.	*I can describe the differences between solids, liquids or gases and use this to group materials.*
KS 2 Y4	States of Matter	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).	*I know that some materials change to a different state when they are heated.*
KS 2 Y4	States of Matter	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	*I can talk about evaporation and condensation as parts of the water cycle and I know that more water evaporates when the temperature is higher.*
KS 2 Y4	Sound		
KS 2 Y4	Sound	Identify how sounds are made, associating some of them with something vibrating.	*I know how sounds are made.*
KS 2 Y4	Sound	Recognise that vibrations from sounds travel through a medium to the ear.	*I know that sounds travel through air (or water) to reach the ear.*
KS 2 Y4	Sound	Find patterns between the pitch of a sound and features of the object that produced it.	*I can talk about how the size or shape of an object creating a sound can affect what the sound will be like.*
KS 2 Y4	Sound	Find patterns between the volume of a sound and the strength of the vibrations that produced it.	*I can talk about how the strength of the vibrations of an object creating a sound can affect how loud the sound will be.*

KS 2 Y4	Sound	Recognise that sounds get fainter as the distance from the sound source increases.	*I know that sounds get fainter as you move away from the place where the sound is being made.*
KS 2 Y4	Electricity		
KS 2 Y4	Electricity	Identify common appliances that run on electricity.	*I can list a number of common objects that need electricity to function.*
KS 2 Y4	Electricity	Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.	*I can build a series circuit, naming the cells, wires, bulbs, switches and buzzers.*
KS 2 Y4	Electricity	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.	*I can tell whether a bulb will light when I look at a circuit as I know the circuit must be a complete loop with a battery.*
KS 2 Y4	Electricity	Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.	*I know what a switch can do when I build or look at a circuit.*
KS 2 Y4	Electricity	Recognise some common conductors and insulators, and associate metals with being good conductors.	*I know metals are good conductors of electricity - and can name some more and also name some good insulators.*

SCIENCE Key Stage 2 Year 5,6

Key Stage	Strand	Objective	Child Speak Target
KS 2 Y5,6	Working Scientifically		
KS 2 Y5,6	Working Scientifically	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	*I can plan scientific experiments to answer questions, including listing the variables in the test and stating which one variable will remain constant.*
KS 2 Y5,6	Working Scientifically	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	*I take measurements very accurately and repeat my measurements to improve my accuracy too.*
KS 2 Y5,6	Working Scientifically	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	*I can use and explore a range of graphs and charts such as scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.*
KS 2 Y5,6	Working Scientifically	Using test results to make predictions to set up further comparative and fair tests.	*I look at experiment test results and make predictions to answer further scientific questions or refine tests to make them fairer.*
KS 2 Y5,6	Working Scientifically	Reporting and presenting 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.	*I can explain my conclusions in detail using a report or graph to describe the key evidence to support my answers and highlight the specific causes of the outcomes of my experiment.*
KS 2 Y5,6	Working Scientifically	Identifying scientific evidence that has been used to support or refute ideas or arguments.	*I support an argument using specific scientific evidence.*

SCIENCE Key Stage 2 Year 5

Key Stage	Strand	Objective	Child Speak Target
KS 2 Y5	Living Things Habitats		
KS 2 Y5	Living Things Habitats	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	*I can speak about the different life cycles of mammals, amphibians, insects and birds.*
KS 2 Y5	Living Things Habitats	Describe the life process of reproduction in some plants and animals.	*I can describe the process of reproduction in some plants and animals.*
KS 2 Y5	Animals		
KS 2 Y5	Animals	Describe the changes as humans develop to old age.	*I know the stages of change as humans develop to old age.*
KS 2 Y5	Properties of Materials		
KS 2 Y5	Properties of Materials	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.	*I can group together everyday materials based their properties such as their hardness, solubility, transparency, conductivity (electrical and heat), and magnetism.*
KS 2 Y5	Properties of Materials	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	*I know that some materials will dissolve in liquid to form a solution, and I can describe how to recover a substance from a solution.*
KS 2 Y5	Properties of Materials	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	*I can decide how mixtures might be separated, choosing from filtering, sieving and evaporating by looking at the materials that need to be separated.*
KS 2 Y5	Properties of Materials	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	*I can describe why some materials are used for a specific purpose, such as glass for windows or copper for wires.*
KS 2 Y5	Properties of Materials	Demonstrate that dissolving, mixing and changes of state are reversible changes.	*I can describe how dissolving, mixing and changes of state are reversible changes.*
KS 2 Y5	Properties of Materials	Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	*I understand that some changes to materials, where new materials are formed, are not reversible, such as the burning or cooking of materials.*
KS 2 Y5	Earth Space		
KS 2 Y5	Earth Space	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.	*I know how the Earth and other planets move around the solar system.*
KS 2 Y5	Earth Space	Describe the movement of the Moon relative to the Earth.	*I can describe how the Moon moves around the Earth.*
KS 2 Y5	Earth Space	Describe the Sun, Earth and Moon as approximately spherical bodies.	*I know that the Sun, Earth and Moon are approximately spherical in shape.*
KS 2 Y5	Earth Space	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	*I know that day and night occur as the Earth rotates.*

KS 2 Y5	Forces		
KS 2 Y5	Forces	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	*I can describe the force of gravity to explain why objects fall.*
KS 2 Y5	Forces	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	*I know that air resistance, water resistance and friction all act on objects to slow them down.*
KS 2 Y5	Forces	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	*I know that levers, pulleys and gears can turn a small force into a greater force.*

SCIENCE Key Stage 2 Year 6

Key Stage	Strand	Objective	Child Speak Target
KS 2 Y6	Living Things Habitats		
KS 2 Y6	Living Things Habitats	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.	*I can describe the groups I classify living things into.*
KS 2 Y6	Living Things Habitats	Give reasons for classifying plants and animals based on specific characteristics.	*I can describe why I classify plants and animals in certain ways.*
KS 2 Y6	Animals		
KS 2 Y6	Animals	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	*I can describe and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.*
KS 2 Y6	Animals	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	*I know that good and bad diet, exercise, drugs and lifestyle all have an effect on how the body functions.*
KS 2 Y6	Animals	Describe the ways in which nutrients and water are transported within animals, including humans.	*I know how nutrients and water are transported within animals, including humans.*
KS 2 Y6	Evolution		
KS 2 Y6	Evolution	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	*I understand that living things have changed over time and that fossils show us the types of animals that lived millions of years ago.*
KS 2 Y6	Evolution	Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	*I know that living things have babies but each baby is similar but not identical to their parents.*
KS 2 Y6	Evolution	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	*I know that animals and plants have adapted or evolved to suit the environment they live in.*
KS 2 Y6	Light		
KS 2 Y6	Light	Recognise that light appears to travel in straight lines.	*I know light travels in straight lines.*
KS 2 Y6	Light	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.	*I know we can see objects because the light from the object or reflected from the object travels into the eye.*
KS 2 Y6	Light	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.	*I can draw light lines from an object into the eye to show how we see.*
KS 2 Y6	Light	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	*I can show that light causes shadows that are smaller or larger shapes of the original object.*

KS 2 Y6	Electricity		
KS 2 Y6	Electricity	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.	*I know a lamp is brighter and a buzzer is louder if the voltage of battery used is higher.*
KS 2 Y6	Electricity	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.	*I can describe how a circuit functions, including the brightness of bulbs and the loudness of buzzers based on the way a circuit is built and the on/off position of switches.*
KS 2 Y6	Electricity	Use recognised symbols when representing a simple circuit in a diagram.	*I can draw a circuit diagram using circuit symbols for lights, wires, switches and other parts.*