

National Curriculum
Science Programs of Study Key Stage 1 and 2



Progression of skills.

Science			
Year 1			
Working scientifically (Y1 and Y2)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can ask simple scientific questions. I can use simple equipment to make observations. 	<p><u>Plants</u></p> <ul style="list-style-type: none"> I can name a variety of common wild and garden plants. I can name the petals, stem, leaf and root of a plant. I can name the roots, trunk, branches and leaves of a tree. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> I can name a variety of animals including fish, amphibians, reptiles, birds and mammals. I can classify and name animals by what they eat (carnivore, herbivore and omnivore). I can sort animals into categories (including fish, amphibians, reptiles, birds and mammals). I can sort living and non-living things. I can name the parts of the human body that I can see. I can link the correct part of the human body to each sense. 	<p><u>Everyday materials</u></p> <ul style="list-style-type: none"> I can distinguish between an object and the material it is made from. I can explain the materials that an object is made from. I can name wood, plastic, glass, metal, water and rock. I can describe the properties of everyday materials. I can group objects based on the materials they are made from. 	<p><u>Seasonal changes</u></p> <ul style="list-style-type: none"> I can observe and comment on changes in the seasons. I can name the seasons and suggest the type of weather in each season.

Year 2

Working scientifically (Y1 and Y2)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> • I can ask simple scientific questions. • I can use simple equipment to make observations. • I can carry out simple tests. • I can identify and classify things. • I can suggest what I have found out. • I can use simple data to answer questions 	<p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> • I can identify things that are living, dead and never lived. • I can describe how a specific habitat provides for the basic needs of things living there (plants and animals). • I can identify and name plants and animals in a range of habitats. • I can match living things to their habitat. • I can describe how animals find their food. • I can name some different sources of food for animals. • I can explain a simple food chain. <p><u>Plants</u></p> <ul style="list-style-type: none"> • I can describe how seeds and bulbs grow into plants. • I can describe what plants need in order to grow and stay healthy (water, light & suitable temperature). <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> • I can explain the basic stages in a life cycle for animals, including humans. • I can describe what animals and humans need to survive. • I can describe why exercise, a balanced diet and good hygiene are important for humans. 	<p><u>Uses of everyday materials</u></p> <ul style="list-style-type: none"> • I can identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. • I can suggest why a material might or might not be used for a specific job. • I can explore how shapes can be changed by squashing, bending, twisting and stretching. 	<p>No content</p>

Year 3

Working scientifically (Y3 and Y4)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can ask relevant scientific questions. I can use observations and knowledge to answer scientific questions. I can set up a simple enquiry to explore a scientific question. I can set up a test to compare two things. I can set up a fair test and explain why it is fair. I can make careful and accurate observations, including the use of standard units. I can use equipment, including thermometers and data loggers to make measurements. I can gather, record, classify and present data in different ways to answer scientific questions. I can use diagrams, keys, bar charts and tables; using scientific language. I can use findings to report in different ways, including oral and written explanations, presentation. I can draw conclusions and suggest improvements. I can make a prediction with a reason. I can identify differences, similarities and changes related to an enquiry. 	<p><u>Plants</u></p> <ul style="list-style-type: none"> I can describe the function of different parts of flowering plants and trees. I can explore and describe the needs of different plants for survival. I can explore and describe how water is transported within plants. I can describe the plant life cycle, especially the importance of flowers. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> I can explain the importance of a nutritious, balanced diet. I can explain how nutrients, water and oxygen are transported within animals and humans. I can describe and explain the skeletal system of a human. I can describe and explain the muscular system of a human. I can describe the purpose of the skeleton in humans and animals. 	<p><u>Rocks</u></p> <ul style="list-style-type: none"> I can compare and group rocks based on their appearance and physical properties, giving a reason. I can describe how fossils are formed. I can describe how soil is made. I can describe and explain the difference between sedimentary and igneous rock. 	<p><u>Light</u></p> <ul style="list-style-type: none"> I can describe what dark is (the absence of light). I can explain that light is needed in order to see. I can explain that light is reflected from a surface. I can explain and demonstrate how a shadow is formed. I can explore shadow size and explain. I can explain the danger of direct sunlight and describe how to keep protected. <p><u>Forces and magnets</u></p> <ul style="list-style-type: none"> I can explore and describe how objects move on different surfaces. I can explain how some forces require contact and some do not, giving examples. I can explore and explain how objects attract and repel in relation to objects and other magnets. I can predict whether objects will be magnetic and carry out an enquiry to test this out. I can describe how magnets work. I can predict whether magnets will attract or repel and give a reason.

Year 4

Working scientifically (Y3 and Y4)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> • I can ask relevant scientific questions. • I can ask relevant scientific questions. • I can use observations and knowledge to answer scientific questions. • I can set up a simple enquiry to explore a scientific question. • I can set up a test to compare two things. • I can set up a fair test and explain why it is fair. • I can make careful and accurate observations, including the use of standard units. • I can use equipment, including thermometers and data loggers to make measurements. • I can gather, record, classify and present data in different ways to answer scientific questions. • I can use diagrams, keys, bar charts and tables; using scientific language. • I can use findings to report in different ways, including oral and written explanations, presentation. • I can draw conclusions and suggest improvements. • I can make a prediction with a reason. • I can identify differences, similarities and changes related to an enquiry 	<p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> • I can group living things in different ways. • I can use classification keys to group, identify and name living things. • I can create classification keys to group, identify and name living things (for others to use). • I can describe how changes to an environment could endanger living things. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> • I can identify and name the parts of the human digestive system. • I can describe the functions of the organs in the human digestive system. • I can identify and describe the different types of teeth in humans. • I can describe the functions of different human teeth. • I can use food chains to identify producers, predators and prey. • I can construct food chains to identify producers, predators and prey. 	<p><u>States of matter</u></p> <ul style="list-style-type: none"> • I can group materials based on their state of matter (solid, liquid, gas). • I can describe how some materials can change state. • I can explore how materials change state. • I can measure the temperature at which materials change state. • I can describe the water cycle. • I can explain the part played by evaporation and condensation in the water cycle. 	<p><u>Sound</u></p> <ul style="list-style-type: none"> • I can describe how sound is made. • I can explain how sound travels from a source to our ears. • I can explain the place of vibration in hearing. • I can explore the correlation between pitch and the object producing a sound. • I can explore the correlation between the volume of a sound and the strength of the vibrations that produced it. • I can describe what happens to a sound as it travels away from its source. <p><u>Electricity</u></p> <ul style="list-style-type: none"> • I can identify and name appliances that require electricity to function. • I can construct a series circuit. • I can identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). • I can draw a circuit diagram. • I can predict and test whether a lamp will light within a circuit. • I can describe the function of a switch in a circuit. • I can describe the difference between a conductor and insulators; giving examples of each.

Year 5

Working scientifically (Y5 and Y6)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> • I can plan different types of scientific enquiry. • I can control variables in an enquiry. • I can measure accurate and precisely using a range of equipment. • I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • I can use the outcome of test results to make predictions and set up a further comparative fair test. • I can report findings from enquiries in a range of ways. • I can explain a conclusion from an enquiry. • I can explain causal relationships in an enquiry. • I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory. • Read, spell and pronounce scientific vocabulary accurately. 	<p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> • I can describe the life cycle of different living things, e.g. mammal, amphibian, insect bird. • I can describe the differences between different life cycles. • I can describe the process of reproduction in plants. • I can describe the process of reproduction in animals. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> • I can create a timeline to indicate stages of growth in humans. 	<p><u>Properties and changes of materials</u></p> <ul style="list-style-type: none"> • I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets). • I can describe how a material dissolves to form a solution; explaining the process of dissolving. • I can describe and show how to recover a substance from a solution. • I can describe how some materials can be separated. • I can demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating). • I know and can demonstrate that some changes are reversible and some are not. • I can explain how some changes result in the formation of a new material and that this is usually irreversible. • I can discuss reversible and irreversible changes. • I can give evidenced reasons why materials should be used for specific purposes. 	<p><u>Sound</u></p> <p><u>Earth and space</u></p> <ul style="list-style-type: none"> • I can describe and explain the movement of the Earth and other planets relative to the Sun. • I can describe and explain the movement of the Moon relative to the Earth. • I can explain and demonstrate how night and day are created. • I can describe the Sun, Earth and Moon (using the term spherical). <p><u>Forces</u></p> <ul style="list-style-type: none"> • I can explain what gravity is and its impact on our lives. • I can identify and explain the effect of air resistance. • I can identify and explain the effect of water resistance. • I can identify and explain the effect of friction. • I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.

Year 6

Working scientifically (Y5 and Y6)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> • I can plan different types of scientific enquiry. • I can control variables in an enquiry. • I can measure accurately and precisely using a range of equipment. • I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • I can use the outcome of test results to make predictions and set up a further comparative fair test. • I can report findings from enquiries in a range of ways. • I can explain a conclusion from an enquiry. • I can explain causal relationships in an enquiry. • I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory. • Read, spell and pronounce scientific vocabulary accurately. 	<p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> • I can classify living things into broad groups according to observable characteristics and based on similarities & differences. • I can describe how living things have been classified. • I can give reasons for classifying plants and animals in a specific way. <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> • I can identify and name the main parts of the human circulatory system. • I can describe the function of the heart, blood vessels and blood. • I can discuss the impact of diet, exercise, drugs and life style on health. • I can describe the ways in which nutrients and water are transported in animals, including humans. <p><u>Evolution and inheritance</u></p> <ul style="list-style-type: none"> • I can describe how the earth and living things have changed over time. • I can explain how fossils can be used to find out about the past. • I can explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents). • I can explain how animals and plants are adapted to suit their environment. • I can link adaptation over time to evolution. • I can explain evolution. 	<p>No content</p>	<p><u>Light</u></p> <ul style="list-style-type: none"> • I can explain how light travels. • I can explain and demonstrate how we see objects. • I can explain why shadows have the same shape as the object that casts them. • I can explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc. <p><u>Electricity</u></p> <ul style="list-style-type: none"> • I can explain how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer. • I can compare and give reasons for why components work and do not work in a circuit. • I can draw circuit diagrams using correct symbols.