

A year 1 scientist
**Working scientifically
(Y1 and Y2)**

- 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

Biology
Plants

- 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.

Animals, including humans

- 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.

Chemistry
Everyday materials

- 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.

Physics
Seasonal changes

- I can observe and comment on changes in the seasons.
- I can name the seasons and suggest the type of weather in each season.

Science End Points	A year 2 scientist			
	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>

Science	End Points	A year 3 scientist			
		<p>Working scientifically (Y3 and Y4)</p> <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>Biology</p> <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>Chemistry</p> <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>Physics</p> <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.

A year 4 scientist
Working scientifically (Y3 and Y4)

- 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.

Biology
Living things and their habitats

- 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.

Animals, including humans

- 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.

Chemistry
States of matter

- 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.

Physics
Sound

- 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.

Electricity

- 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.

A year 5 scientist
**Working scientifically
(Y5 and Y6)**

- 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.

Biology
Living things and their habitats

- 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.

Animals, including humans

- I can create a timeline to indicate stages of growth in humans.

Chemistry
Properties and changes of materials

- 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.

Physics
Earth and space

- 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).

Forces

- 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.

Science	End Points	A year 6 scientist			
		<p>Working scientifically (Y5 and Y6)</p> <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>Biology</p> <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>Chemistry</p> <p>No content</p>	<p>Physics</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.

