

Year 1 Science: Being a Scientist

Working Scientifically	Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can ask simple questions. I can make simple observations. I can observe and begin to record changes over time. I can use simple scientific equipment. I can follow a plan to carry out a simple test. I can sort and group objects, materials and living things. I can record my findings independently using words, pictures and tables. I can use my findings to answer questions. I can talk about what I have found out and how I found it out. I can use simple scientific vocabulary. 	<p>Plants</p> <p>I can name a variety of common wild and garden plants.</p> <p>I can name the petals, stem, leaf and root of a plant.</p> <p>I can name the roots, trunk, branches and leaves of a tree.</p>	<p>Everyday materials</p> <p>I can distinguish between an object and the material it is made from.</p> <p>I can explain the materials that an object is made from.</p> <p>I can name wood, plastic, glass, metal, water and rock.</p> <p>I can describe the properties of everyday materials.</p> <p>I can group objects based on the materials they are made from.</p>	<p>Seasonal changes</p> <p>I can observe and comment on changes in the seasons.</p> <p>I can name the seasons and suggest the type of weather in each season.</p>
	<p>Animals, including humans</p>		
	<p>I can name a variety of animals including fish, amphibians, reptiles birds and mammals.</p> <p>I can classify and name animals by what they eat (carnivore, herbivore and omnivore).</p> <p>I can sort animals into categories (including fish, amphibians, reptiles, birds and mammals).</p> <p>I can sort living and non-living things.</p> <p>I can name the parts of the human body that I can see.</p> <p>I can link the correct part of the human body to each sense.</p>		

Year 2 Science: Being a Scientist

Working Scientifically	Biology	Chemistry
<ul style="list-style-type: none"> I can ask simple questions and recognise they can be answered in different ways. I can make careful observations. I can record changes over time and begin to notice patterns and relationships. I can use simple scientific equipment. I can plan and carry out a simple test. I can carry out a fair test. I can decide how to sort and group objects, materials and living things. I can gather and record simple data using tables, graphs, words and labelled diagrams. I can use my findings to answer questions. I can use a variety of sources, such as books and the internet, to answer questions. I can talk about what I have found out and how I found it out. I can use, read and spell simple scientific vocabulary. 	<p>Living things and their habitats</p> <p>I can identify things that are living, dead and never lived.</p> <p>I can describe how a specific habitat provides for the basic needs of things living there (plants and animals).</p> <p>I can identify and name plants and animals in a range of habitats.</p> <p>I can explore and describe a micro-habitat</p> <p>I can match living things to their habitat.</p> <p>I can describe how animals find their food.</p> <p>I can name some different sources of food for animals.</p> <p>I can explain a simple food chain.</p>	<p>Uses of everyday materials</p> <p>I can identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard.</p> <p>I can describe some properties of common materials.</p> <p>I can perform simple tests to find out which materials are waterproof and absorbent.</p> <p>I can suggest why a material might or might not be used for a specific job.</p> <p>I can explore how shapes can be changed by squashing, bending, twisting and stretching.</p> <p>I understand that throwing plastic away can cause problems and is a waste.</p> <p>I understand the importance of recycling plastic in order to look after the environment.</p>
	<p>Plants</p> <p>I can describe how seeds and bulbs grow into plants.</p> <p>I can describe what plants need in order to grow and stay healthy (water, light & suitable temperature).</p> <p>I can describe what leaves need to make food for the plant.</p> <p>I know what the green plant uses its food for.</p> <p>I can make careful observational drawings of the inside of seeds and bulbs.</p>	
	<p>Animals, including humans</p> <p>I can explain the basic stages in a life cycle for animals, including humans.</p> <p>I can describe what animals and humans need to survive.</p> <p>I can describe why exercise, a balanced diet and good hygiene are important for humans.</p>	

Year 3 Science: Being a Scientist

Working Scientifically	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 a prediction with a reason. 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. I can use relevant scientific language. I can report findings in different ways, including oral and written explanations and presentation. I can draw simple conclusions. 	<p>Plants</p> <ul style="list-style-type: none"> I can describe the function of different parts of flowing plants: roots, stem/trunk, leaves and flowers. I can explore and describe the needs of different plants for survival: air, light, water, nutrients from soil and room to grow. I can explore and describe how water is transported within plants. I can describe the plant life cycle, especially the importance of flowers: pollination, seed formation and dispersal. 	<p>Rocks</p> <ul style="list-style-type: none"> I can compare and group rocks based on their appearance and simple physical properties. I can use equipment to closely observe and classify rocks: grains or crystals. I can explore the properties of rocks: crumbliness, absorbency I can describe how soil is made from rocks and organic matter. 	<p>Light</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, reflecting differently from different surfaces. I can explain and demonstrate how a shadow is formed. I can explore and explain how to change the size and shape of a shadow. I can explain the danger of direct sunlight and describe how to keep protected.
	<p>Animals including humans</p>	<p>Soils</p>	<p>Forces and magnets</p>
	<ul style="list-style-type: none"> I can explain the importance of a nutritious, balanced diet. I know that animals cannot make their own food but get nutrition from what they eat. I can explain how nutrients, water and oxygen are transported within animals and humans. I can describe and explain the skeletal systems of humans and animals. I can explain the purpose of muscles and skeletons for support protection and movement. I can describe how some animals do not have skeletons. 	<ul style="list-style-type: none"> I can explore different soils and identify similarities and differences. I know that different rocks are formed in different ways to create sedimentary and igneous rock. I can describe how fossils are formed. 	<ul style="list-style-type: none"> I can explore and compare how objects move on different surfaces. I can explain how some forces require contact and magnets do not. I can predict whether objects will be magnetic and carry out an enquiry to test this out. I can explore how magnets attract some materials and not others. I can explain how magnets attract and repel in relation to other magnets. I can describe magnets as having two poles I can predict whether magnets will attract or repel each other depending on direction.

Year 4 Science: Being a Scientist

Working Scientifically	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 simple enquiries to explore a scientific question making reasoned predictions. I can set up comparative and fair tests. I can make careful and accurate observations, including the use of standard units. I can use a range of equipment, including thermometers and data loggers. I can gather, record, classify and present data in different ways including diagrams, keys, bar charts and tables. I can use relevant scientific language. I can report findings in different ways, including oral and written explanations and presentations. I can draw simple conclusions, suggest improvements and raise further questions. I can identify differences, similarities and changes related to an enquiry. 	<p>Living things and their habitats</p> <p>I can group living things in a variety of ways. I can classify living things according to their individual characteristics. I can use classification keys to group, identify and name living things. I can create classification keys for others to use in order to group, identify and name living things. I recognise that environments may change and that this may pose dangers to living things.</p>	<p>States of matter</p> <p>I can group materials based on their state of matter. I can explain how a material changes state as it is heated or cooled. I can measure or research the temperature at which a material changes state I can describe the water cycle. I can explain the part played by evaporation and condensation in the water cycle.</p>	<p>Sound</p> <p>I can explain that sound is made by something vibrating. I can describe how sound travels in waves to our ears. I can find patterns between the pitch of a sound and the size of the object which produced it. I can find patterns between the volume of a sound and the strength of the vibrations that produced it. I recognise that sounds get fainter as they distance from the source increases.</p>
	<p>Animals, including humans</p> <p>I can identify and name the main organs in the human digestive system. I can explain the functions of the main organs in the human digestive system. I can identify and name the different types of teeth in humans. I can describe the functions of different human teeth. I can give examples of producers, predators and prey. I can use food chains to identify producers, predators and prey. I can construct food chains to identify producers, predators and prey.</p>		<p>Electricity</p> <p>I can identify and name appliances that run on electricity. I can identify and name the components of a series circuit (cell, wire, bulb, switch and buzzer). I can explain the function of a switch in a circuit. I can construct a series circuit. I can predict and test whether a bulb will light within a circuit. I can give examples of electrical conductors and insulators. I can draw a circuit diagram.</p>

Year 5 Science: Being a Scientist

Working Scientifically	Biology	Chemistry	Physics
<p>I can plan different types of scientific enquiry to answer questions.</p> <p>I can recognise and control variables.</p> <p>I can take measurements with increasing accuracy and precision using a range of equipment, including data loggers.</p> <p>I can take repeat readings when appropriate.</p> <p>I can record data and results using scientific diagrams and labels, tables, bar and line graphs.</p> <p>I can use test results to make predictions and set up further comparative fair tests.</p> <p>I can report and explain findings from enquiries in a range of ways.</p> <p>I can explain a conclusion from an enquiry.</p> <p>I can relate the outcome from an enquiry to scientific knowledge.</p> <p>I can read, spell and pronounce scientific vocabulary accurately.</p>	<p>Living Things and their Habitats</p> <p>I can describe the life cycle of different living things, e.g. mammal, amphibian, insect and bird.</p> <p>I can describe the differences between different life cycles.</p> <p>I can describe the process of reproduction in plants.</p> <p>I can explain other ways in which plants can reproduce.</p>	<p>Properties and Changes of Materials</p> <p>I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets).</p> <p>I can describe how some materials dissolve to form a solution, explaining the process of dissolving.</p> <p>I can use knowledge of liquids and gasses to describe and demonstrate how to recover a substance from a solution by evaporation.</p>	<p>Earth and Space</p> <p>I can describe the movement of the Earth and other planets relative to the Sun.</p> <p>I can describe the movement of the Moon relative to the Earth.</p> <p>I can explain and demonstrate how night and day are created.</p> <p>I can describe the Sun, Earth and Moon as approximately spherical.</p>
	<p>Animals including humans</p> <p>I can describe the process of reproduction in animals.</p> <p>I can create a timeline to indicate stages of growth in humans.</p> <p>I can describe the changes involved in human development.</p>	<p>I can describe and demonstrate how solid materials can be separated through filtering and sieving.</p> <p>I know that some changes are reversible and some are not.</p> <p>I can test and demonstrate reversible and irreversible changes.</p> <p>I can explain how some changes result in the formation of a new material and that this is usually irreversible.</p> <p>I can test and give reasons why materials should be used for specific purposes.</p>	<p>Forces</p> <p>I can explain the force of gravity.</p> <p>I can identify and explain the effect of air resistance.</p> <p>I can identify and explain the effect of water resistance.</p> <p>I can identify and explain the effect of friction.</p> <p>I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.</p>

Year 6 Science: Being a Scientist

Working Scientifically	Biology	Physics
<p>I can plan different types of scientific enquiry to answer questions.</p> <p>I can recognise and control variables that will affect my results.</p> <p>I can take accurate and precise measurements using a range of equipment including data loggers.</p> <p>I can take repeat readings when appropriate.</p> <p>I can record data and results of increasing complexity using labelled diagrams, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>I can use test results to make predictions and set up further comparative fair tests.</p> <p>I can report and explain findings from enquiries in a range of ways.</p> <p>I can choose the best way to display results, depending on the data collected.</p> <p>I can explain a conclusion from an enquiry.</p> <p>I can explain causal relationships in an enquiry.</p> <p>I can relate the outcome from an enquiry to scientific knowledge and state whether evidence supports or refutes an argument or theory.</p> <p>Read, spell and pronounce scientific vocabulary accurately.</p>	<p>Living Things and their Habitats</p> <p>I can describe how living things are classified into broad groups according to characteristics, similarities and differences, including micro-organisms, plants and animals.</p> <p>I can give reasons for classifying plants and animals based on specific characteristics.</p> <p>I can subdivide broad groupings, such as micro-organisms, plants and animals, into vertebrates and invertebrates.</p> <p>I can use classification systems, such as keys, to identify animals and plants in our immediate environment.</p> <p>I can describe the work of scientists who have led work on classification.</p>	<p>Light</p> <p>I recognise that light appears to travel in straight lines and apply that knowledge to the statements below.</p> <p>I can explain that objects are seen because they give out or reflect light into the eye.</p> <p>I can explain that we see things because light travels from light sources to our eyes or rebounds off objects and then to our eyes.</p> <p>I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>I use my knowledge of the light spectrum to help explore the phenomena of rainbows, colours on soap bubbles, colour filters and objects looking bent in water.</p>
	<p>Animals including humans</p> <p>I can identify and name the main parts of the human circulatory system.</p> <p>I can describe the functions of the heart, blood vessels and blood.</p> <p>I recognise and explain the impact of diet, exercise, drugs and lifestyle on the way the human body functions.</p> <p>I can describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>Electricity</p> <p>I can explain the relationship between the voltage or number of cells in a circuit and how this affects different components.</p> <p>I can compare and give reasons for variation in how the components of a circuit work.</p> <p>I can use the correct circuit symbols when representing components in circuit diagrams.</p>
	<p>Evolution and Inheritance</p> <p>I can explain that living things have changed over time and that fossils provide information about living things from the past.</p> <p>I can explain that living things produce offspring of the same kind.</p> <p>I know that offspring vary and are not identical to their parents.</p> <p>I can identify how animals and plants are adapted to suit their environment.</p> <p>I understand that adaptations could lead to evolution of a species.</p>	<p>I can explain the safety precautions for working with electricity.</p> <p>I use my knowledge of electrical circuits to create a circuit for a particular purpose.</p>

