

Working Scientifically	Animals including Humans	Plants	Forces and Motion	Light	State of Matter	Everyday Materials and Uses
observing closely using simple equipment	identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates	identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen	describe how things move at different speeds, speed up and slow down, using simple comparisons, comparative vocabulary and superlative vocabulary	identify and name a variety of sources of light that we can see with our eyes, including electric lights, flames and the Sun	compare and group together materials according to whether they are solids, liquids or gases	distinguish between an object and the material from which it is made
performing simple tests	identify and name a variety of common animals that are carnivores, herbivores and omnivores	describe the basic structure of a variety of common plants including roots, stem, leaves and flowers	Forces and Magnets	explain that darkness is the absence of light	explain that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C)	identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
identifying and classifying	describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets) and describe how they are suited to their environment	describe how seeds and bulbs grow into mature plants	explore and discuss how a push or a pull is exerted by something and acts on something else	compare the variety of sources of light, using simple comparisons, comparative vocabulary and superlative vocabulary	compare and give reasons, based on measurements, for changes to the state of water, using correct scientific vocabulary	describe the simple physical properties of a variety of everyday materials
recording findings using standard units, drawings, diagrams, photographs, simple prepared formats such as tables and charts, tally charts, and displays	identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	describe how plants need water, light and a suitable temperature to grow and stay healthy	describe how some forces are made by contact (pushing, pulling) while others act at a distance (e.g. gravity and magnets)	describe the features of day and night, including changes in light and temperature	compare and group together a variety of everyday materials on the basis of their simple physical properties	compare and group together a variety of everyday materials on the basis of their simple physical properties
setting up simple comparative and fair tests, using a range of equipment including dataloggers	explain that animals including humans have offspring which grow into adults	identify and describe the functions of different parts of plants: roots, stem, leaves and flowers	explain how gravity pulls things down, and that on the Earth's surface, we are supported by a contact force with the ground	describe the movement of the Sun across the sky during the day	find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	identify the part played by evaporation and condensation in the water cycle
beginning to make accurate measurements using standard units	explain the basic needs of animals, including humans, for survival (which are water, food and air)	identify the requirements of plants for life and growth (air, light, water, nutrients from soil and space) and how they vary from plant to plant	describe the use of magnets in familiar objects	explain how shadows are made when a light source is blocked by something that is not transparent	investigate the size of shadows	based on testing, explore differences between materials, including attraction to a magnet, and floating or sinking
recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables	describe the importance for humans of exercise and eating the right amounts of different types of food	describe the ways in which nutrients, water and oxygen are transported within plants	explain that magnets attract magnetic materials; that magnets work through, e.g. cardboard	make a magnet	Properties of Everyday Materials and Reversible Change	compare and group together everyday materials based on evidence from comparative tests and fair tests, including hardness, solubility, conductivity and insulation (electricity and heat), behaviour with magnets
reporting on findings from investigations, including written explanations of results and conclusions, displays or presentations	explain 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	Habitats	make a magnet	investigate the size of shadows	compare and group together everyday materials based on evidence from comparative tests and fair tests, including hardness, solubility, conductivity and insulation (electricity and heat), behaviour with magnets	compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet or will sink/float
using results to draw simple conclusions and suggest improvements and predictions for setting up further tests	describe the ways in which nutrients, water and oxygen are transported within animals, including humans	identify that living things live in habitats to which they are particularly 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	compare and give reasons, based on testing, for how forces, including gravity, friction, air and water resistance, affect the movement of a variety of objects	explain that objects are seen because they give out or reflect light into the eye, using results of any comparative tests. Explain the scientific idea that light travels in straight lines from a light source or is reflected from a surface into the eye	explain that some substances will dissolve in liquid to form a solution, and how to recover a substance from a solution	Rocks
planning investigations, including, recognising and controlling variables where appropriate	identify that humans and some animals have skeletons and muscles for support and movement	identify and name a variety of plants and animals they study in a variety of habitats, including microhabitats	explain, through observation, that forces push and pull objects, making them change shape, and that there is always something doing the pushing or pulling either by contact or at a distance	explain that light can be broken into colours and that different colours of light can be combined to appear as a new colour	use knowledge of solids, liquids and gases to decide how mixtures might be separated, including filtering, sieving and evaporating	compare and group together different kinds of rocks on the basis of their simple physical properties
taking measurements using a range of scientific equipment with increasing accuracy and precision	identify and name the basic parts of the digestive system in humans	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	explain that drag forces tend to slow things down, including air resistance and, to a greater extent, resistance in liquids	explain how the ray model of light explains the size of shadows	give reasons, where appropriate, for the uses of everyday materials based on evidence from comparative tests and fair tests, including metals, wood and plastic	relate the simple physical properties of some rocks to their formation (igneous or sedimentary)
recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models	identify the simple functions of the teeth and different types of teeth in humans	identify and name a variety of living things that can be grouped as producers, consumers, predator, prey, herbivores, carnivores and omnivores (including examples of plants and animals)	measure the size of a force	use simple optical instruments	explain that some changes result in the formation of new materials, and that this kind of change is difficult to reverse	describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock
reporting findings from investigations, including written explanations of results, explanation involving causal relationships, and conclusions	Identify and name the basic parts and organs of the human circulatory and gaseous exchange systems, and explain their functions, including: - human circulatory system - the heart, blood vessels, blood, blood pressure and clotting - gaseous exchange system - lungs, nose, throat, bronchi, bronchial tubes, diaphragm, ribs and breathing	identify and name a variety of plants and animals they study in a variety of habitats, including microhabitats	explain the idea of speed	Sound	Changes that form New Materials	Earth and Space
presenting reports of findings in written form, displays and presentations	Classification of Living Things	explain, using food chains and simple food webs, how feeding relationships occur in the local environment, including a variety of habitats and micro habitats	determine the distance travelled based on the speed and time of travel	identify and name a variety of sources of sound that we can hear with our ears, and how the sounds are made	explain that there are other planets around distant stars, and name some constellations, as observed by Earth	explain that the Sun is at the centre of our solar system and that the Sun, Earth and Moon are approximately spherical
continuing to develop the ability to use test results to make predictions to set up further comparative and fair tests	Identify and name the basic parts and organs of the human circulatory and gaseous exchange systems, and explain their functions, including: - human circulatory system - the heart, blood vessels, blood, blood pressure and clotting - gaseous exchange system - lungs, nose, throat, bronchi, bronchial tubes, diaphragm, ribs and breathing	All Living Things	Static Electricity and Magnetism	compare the variety of sources of sound, using simple comparisons, comparative vocabulary and superlative vocabulary	explain that the Sun is one of a great many stars in the galaxy called the Milky Way, and the Milky Way is one of a vast number of galaxies in the universe	explain that the Sun is one of a great many stars in the galaxy called the Milky Way, and the Milky Way is one of a vast number of galaxies in the universe
	Evolution and Inheritance	explain the differences between things that are living and things that have never been alive	explain that magnets have two poles, and that magnets can both attract and repel – unlike poles attract and like poles repel	develop understanding of patterns of pitch and volume, and explore varying sound systematically	explain that there are other planets around distant stars, and name some constellations, as observed by Earth	explain that the Sun is one of a great many stars in the galaxy called the Milky Way, and the Milky Way is one of a vast number of galaxies in the universe
		describe the life cycles common to a variety of animals including humans (birth, growth, development, reproduction, death), and to a variety of plants (growth, reproduction and death)	describe the effects of static electricity and show that they occur when some materials are rubbed together	explain how sounds are heard using results of any comparative tests, and the scientific idea that sounds are made by vibrations that travel from a source and through materials (solids, liquids and gases) to the ear	explain that the Earth moves around the Sun, taking one year to do so; that the Moon moves around the Earth, taking 28 days to do so; and that the Earth revolves, taking one day	explain that the Earth moves around the Sun, taking one year to do so; that the Moon moves around the Earth, taking 28 days to do so; and that the Earth revolves, taking one day
		describe respiration as the activity that releases energy from food as a fuel to maintain the body's activity, and identify that plants also respire	describe the use of electricity to power common appliances	Key:		identify the four seasons and the regular changes in sunlight and weather associated with them in the UK
		explain the classification of living things into broad groups according to common observable characteristics and based on similarities and differences, including plants, animals and micro-organisms	construct a simple electric circuit, demonstrating that the circuit must be correctly constructed and complete in order for components to function	Year 1		
		compare the life process of reproduction amongst plants and animals	explain that some materials conduct electricity while others do not, using results of any comparative tests	Year 2		
		describe the changes as humans develop from birth to old age	explain about closed and open circuits, and that a switch placed anywhere in a circuit switches everything on/off	Year 3		
			identify and name the basic parts of a simple electric series circuit, including cells, wires, bulbs, switches, and buzzers, and compare and give reasons for variations in how components function, including brightness of bulbs, loudness of buzzers and on/off position of switches	Year 4		
			explain that short circuits may cause wires to heat up and that fuses are electrical safety devices that are triggered by short circuits	Year 5		
			explain the effect of changing the voltage of a battery	Year 6		

