



Subject: Science

Year Group	Knowledge *non-negotiable knowledge highlighted in green	Skills *non-negotiable knowledge highlighted in green	Vocabulary	Inspirational people/events	Club/visit/experts
R	<ul style="list-style-type: none"> • Know that there are different countries in the world and talk about the differences they have experienced or seen in photos. • Explore the natural world around them. Describe what they see, hear and feel whilst outside. • Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them 	<ul style="list-style-type: none"> • Talk about what you can see – what has changed? • Discuss what is the same and what is different. • Plants grow from seeds. Plants need light and water to grow. • Animals Change as they grow – explore life cycles. • Talk about where you live • Handle animals gently and with care and look after things in our environment. • We have four seasons – Be able to talk about • Spring/Summer/Autumn/winter and the changes to the environment 	Change, Hot , Cold, Hard,, Soft, rough, smooth, Plant, Seed, Water, Sun, Soil, Egg, Hatch, Crack, Duckling, Baby, tiny, caterpillar, butterfly, grow, big, small, different, world, season, weather, trees, leaves		

1	<p>Working Scientifically</p> <ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions. 				
1	<p>Animals Including Humans</p> <ul style="list-style-type: none"> • Identify and name a variety of common animals including birds, fish, amphibians, reptiles and mammals. • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • Identify and name a variety of common animals that are carnivores, herbivores and omnivore. • Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, and mammals, including pets). 	<ul style="list-style-type: none"> • There are many different animals with different characteristics. • Animals have senses to help individuals survive. • When animals sense things they are able to respond. • Animals need food to survive. • Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy. 	<p>human animal plants meat amphibian fish bird mammal reptile herbivore carnivore omnivore</p>	<p>Chris Packham Animal conservationist, wildlife photographer</p> <p>Careers Zoologist Wildlife photographer</p>	

1	<p>Seasonal change</p> <ul style="list-style-type: none"> Observe changes across four seasons. Observe and describe weather associated with seasons and how day length varies. 	<ul style="list-style-type: none"> Weather can change There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc Days are longer and hotter in the summer Days are shorter and colder in the winter There are four seasons: Spring, Summer, Autumn, Winter 	summer winter autumn spring day wind rain snow / hail / sleet fog sun	Liam Dutton Weatherperson/ meteorologist Careers Meteorologist Climatologist	
1	<p>Everyday Materials</p> <ul style="list-style-type: none"> Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties 	<ul style="list-style-type: none"> There are many different materials that have different describable and measurable properties. Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass). The properties of a material determine whether they are suitable for a purpose. 	materials natural man-made bake bend twist stretch squash heat cool freeze melt boil	William Addis Inventor of the toothbrush Careers Material scientist	
1	<p>Plants</p> <ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Identify and name a variety of plants and animals in their habitats, including microhabitats. 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. 	<ul style="list-style-type: none"> Plants grow from seeds/bulbs Plants need light and water to grow and survive Plants are important We can eat lots of plants 	reproduce young animal plants Shoot fruit earth soil stem root	Beatrix Potter Author and Botanist Careers Arborist Botanist	

	<ul style="list-style-type: none">• 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.

<p>Year 2</p>	<p>Working Scientifically</p> <ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions <p>gathering and recording data to help in answering questions.</p>				
<p>2</p>	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> • Identify and name a variety of plants and animals in their habitats, including microhabitats. • 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. • 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. 		<p>living / non-living / dead minibeast microhabitat herbivore carnivore omnivore tropical desert consumer producer predator prey</p>	<p>Rachel Carson Marine Biologist</p> <p>Careers Taxonomist Wildlife film maker</p>	

<p>2</p>	<p>Plants</p> <ul style="list-style-type: none"> • Observe and describe how seeds and bulbs grow into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • 	<ul style="list-style-type: none"> • Plants grow from seeds/bulbs • Plants need light, water and warmth to grow and survive • Flowers make seeds to make more plants (reproduce) • Plants are important • We need plants to survive (to clean air, to eat) • We can eat different parts of the plants (leaves, • stems, roots, seeds, fruit) 	<p>roots stem leaf bulb seed flower grain fruit trunk germinate branch legume</p>	<p>George Washington Carver Botanist</p> <p>Careers Gardener Tree surgeon</p>	
<p>2</p>	<p>Animals Including Humans</p> <ul style="list-style-type: none"> • Notice that animals, including humans, have offspring which grow into adults. • Find out about and describe the basic needs of animals, including humans, for survival (water, food, air). • Describe the importance for humans of exercise, eating the right amount of different types of food and hygiene. 	<ul style="list-style-type: none"> • Animals move in order to survive. • Different animals move in different ways to help them survive. • Exercise keeps animal's bodies in good condition and increases survival chances. • All animals eventually die. • Animals reproduce new animals when they reach maturity. • Animal 	<p>adult mammal bird reptile amphibian pregnancy egg spawn tadpole lungs</p>	<p>Yann Le Meur Sports Scientist</p> <p>Careers Animal behaviourist Exercise physiologist</p>	

<p>2</p>	<p>Uses of Everyday Materials</p> <ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, paper and cardboard for particular uses. 	<ul style="list-style-type: none"> Materials can be changed by physical force (twisting, bending, squashing and stretching) 	<p>Ice fabric leather wool wood metal plastic glass hard soft stretchy stiff shiny dull waterproof transparent non-transparent</p>	<p>Charles Macintosh Inventor of waterproof material</p> <p>Careers Builder Mechanical engineer</p>	
<p>Year 3</p>	<p>Working Scientifically</p> <ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or 				

	<p>presentations of results and conclusions</p> <ul style="list-style-type: none"> • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes ♣ <p>using straightforward scientific evidence to answer questions or to support their findings.</p>				
3	<p>Animals Including Humans</p> <ul style="list-style-type: none"> • 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. • Identify that humans and some animals have skeletons and muscles for support and movement • 	<ul style="list-style-type: none"> • Different animals are adapted to eat different foods. • Many animals have skeletons to support their bodies • and protect vital organs. • Muscles are connected to bones and move them when they contract. • Movable joints connect bones 	<p>water mineral vitamins carbohydrates protein small intestine large intestine oesophagus stomach muscles</p>	<p>Willhelm Rontgen Invented the X-Ray</p> <p>Careers Physiologist dietitian</p>	<p>Visit to the Science Centre</p>
3	<p>Plants</p> <ul style="list-style-type: none"> • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • 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. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • Describe the life process of reproduction in some plants. 	<ul style="list-style-type: none"> • Plants are producers, they make their own food. • Their leaves absorb sunlight and carbon dioxide • Plants have roots, which provide support and draw • water from the soil • Flowering plants have specific adaptations which help • it to carry out pollination, fertilisation and seed • production • Seed dispersal improves a plants chances of successful • reproduction • Seeds/bulbs require the right conditions to germinate • and grow. • Seeds co 	<p>seed bulb plant root leaf bud blossom wild plants garden plants evergreen deciduous</p>	<p>Ahmed Mumin Warfa Somali Botanist</p> <p>Careers Horticulturists Irrigation engineer</p>	

<p>3</p>	<p>Rocks</p> <ul style="list-style-type: none"> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made of rocks and organic matter. 	<ul style="list-style-type: none"> • There are different types of rock. • There are different types of soil. • Soils change over time. • Different plants grow in different soils. • Fossils tell us what has happened before. • Fossils provide evidence. • Palaeontologists use Fossils to find out about the past. • Fossils provide evidence that living things have • changed over time. 	<p>sedimentary fossils organic matter soil grains crystals physical properties hard / soft absorbent/not absorbent shiny / dull</p>	<p>Mary Anning Fossilist</p> <p>Careers Geologist Volcanologist</p>	
<p>3</p>	<p>Light</p> <ul style="list-style-type: none"> • Recognise that they need light in order to see things and that dark is the absence of light. • Recognise that light from the sun is dangerous and that there are ways to protect their eyes • Notice that light is reflected from surfaces. • Recognise that shadows are formed when the light from the source is blocked by a solid object. • Find patterns in the way that size of shadows change. 	<ul style="list-style-type: none"> • There must be light for us to see. Without light it is • dark. • We need light to see things even shiny things. • Transparent materials let light travel through them, and opaque materials don't let light through. • Beams of light bounce off some materials (reflection). • Shiny materials reflect light beams better than non-shiny materials. • Light comes from a source 	<p>light shadow dark reflect block solid artificial natural surface sun</p>	<p>Ibn-al-Haytham Mathematician and astronomer</p> <p>Careers Astronomer Optician</p>	
<p>3</p>	<p>Forces and Magnets</p> <ul style="list-style-type: none"> • Compare how things move on different surfaces. • Notice that some forces need contact between two objects. • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials on the 	<ul style="list-style-type: none"> • Magnets exert attractive and repel Magnets exert non-contact forces, which work through some materials. • Magnets exert attractive forces on some materials. • Magnet forces are affected by magnet strength, • object mass, distance from object and object material. • expulsive forces on each other 	<p>magnet attract repel magnetic North South magnetic poles force surface magnetic field</p>	<p>William Gilbert Magnetism and electricity</p> <p>Careers Architect Astronautical engineer Seismologist</p>	

	<p>basis of whether they are attracted to a magnet and identify some magnetic materials.</p> <ul style="list-style-type: none"> Describe magnets having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. 				
<p>Year 4</p>	<p>Working Scientifically</p> <ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. 				

<p>4</p>	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things. 	<ul style="list-style-type: none"> Living things can be divided into groups based upon their characteristics Environmental change affects different habitats differently Different organisms are affected differently by environmental change Different food chains occur in different habitats Human activity significantly affects the environment 	<p>environment flowering non-flowering plants animals vertebrae invertebrate population deforestation development litter</p>	<p>Gladys West Mathematician/GPS</p> <p>Careers</p> <p>Conservationist Ecologist</p>	
<p>4</p>	<p>Electricity</p> <ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple series circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit based on whether or not a lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights on a simple series circuit. Recognise some common conductors and insulators and associate metals with being good conductors. 	<ul style="list-style-type: none"> A source of electricity (mains of battery) is needed for electrical devices to work. Electricity sources push electricity round a circuit. More batteries will push the electricity round the circuit faster. Devices work harder when more electricity goes through them. A complete circuit is needed for electricity to flow and devices to work. Some materials allow electricity to flow easily and these are called conductors. Materials that don't allow electricity to flow easily are called insulators 	<p>appliance electricity electric circuit cell wire bulb buzzer insulator conductor switch electrical safety</p>	<p>Michael Faraday Physicist</p> <p>Careers</p> <p>Electrical engineer Physicist</p>	
<p>4</p>	<p>Sound</p> <ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. 	<ul style="list-style-type: none"> Sound travels from its source in all directions and we hear it when it travels to our ears. Sound travel can be blocked. Sound spreads out as it travels. Changing the shape, size and material of an object will change the sound it produces. 	<p>vibrate vibrating vibration medium volume sound pitch percussion string</p>	<p>Evelyn Glennie Deaf Percussionist</p> <p>Careers</p> <p>Audiologist Sound engineer</p>	

	<ul style="list-style-type: none"> Understand that sound travels in waves of vibrations through a range of media. Find patterns between the pitch of a sound and the features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases. 	<ul style="list-style-type: none"> Sound is produced when an object vibrates. Sound moves through all materials by making them vibrate 	<p>woodwind brass insulate faint</p>		
4	<p>Animals Including Humans</p> <ul style="list-style-type: none"> Construct and interpret a variety of food chains, identifying producers, predators and prey. 	<ul style="list-style-type: none"> Animals have teeth to help them eat. Different types of teeth do different jobs. Food is broken down by the teeth and further in the stomach and intestines where nutrients go into the blood. The blood takes nutrients around the body. Nutrients produced by plants move to primary consumers then to secondary consumers through food chains. 	<p>Nutrition vitamins minerals fats proteins carbohydrates fibre skeleton support protection movement contract</p>	<p>Ivan Pavlov Physiologist</p> <p>Careers Orthodontist Nutritionist</p>	
4	<p>States of Matter</p> <ul style="list-style-type: none"> Compare and group together materials according to whether they are solids, liquids or gases. 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) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<ul style="list-style-type: none"> Solids, liquids and gases are described by observable properties. Materials can be divided into solids, liquids and gases. Heating causes solids to melt into liquids and liquids evaporate into gases. d) Cooling causes gases to condense into liquids and liquids to freeze into solids. The temperature at which given substances change state are always the same. 	<p>solid solidity evaporate evaporation condense condensation iron temperature gas freeze melt heat cool cooled liquid</p>	<p>Daniel Fahrenheit Inventor of the thermometer</p> <p>Careers Nano scientist Science Teacher</p>	
Year 5	Working Scientifically				

	<ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests 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 identifying scientific evidence that has been used to support or refute ideas or arguments. 				
5	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> Describe the life process of reproduction in some animals. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 	<ul style="list-style-type: none"> Different animals mature at different rates and live to different ages. Some organisms reproduce sexually where offspring inherit information from both parents. Some organisms reproduce asexually by making a copy of a single parent. Environmental change can affect how well an organism is suited to its environment. 	<p>sexual asexual prehistoric similarities differences mammals amphibians insects birds reproduction vertebrates invertebrates</p>	<p>Malaika Vaz National Geographic explorer</p> <p>Careers Famer Oceanographer</p>	

		<ul style="list-style-type: none"> Different types of organisms have different lifecycles 			
5	Animals including Humans <ul style="list-style-type: none"> Describe the changes as humans develop to old age. 	<ul style="list-style-type: none"> Different animals mature at different rates and live to different ages. Puberty is something we all go through, a process which prepares our bodies for being adults, and reproduction Hormones control these changes, which can be physical and/or emotional. 	human development baby toddler child teenager adult puberty gestation length mass grow growing	Sigmund Freud Created psychoanalysis Careers Physiotherapist Psychiatrist	
5	Properties and Changes of Materials <ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and heat) and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative tests and fair tests, for the particular uses of everyday materials including metals, wood and plastic. Demonstrate that dissolving, mixing and change of state are reversible changes. Explain that some changes result in the formation of new materials and that this kind of change is not 	<ul style="list-style-type: none"> When two or more substances are mixed and remain present the mixture can be separated. Some changes can be reversed, and some cannot. Materials change state by heating and cooling 	solubility transparency electrical conductor thermal conductor evaporating dissolve solution reversible irreversible quantitative	Becky Schroeder Inventor of the glow sheet Careers Chemical engineer Biochemist	

	usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.				
5	Earth and Space <ul style="list-style-type: none"> Describe the Sun, Earth and Moon as approximately spherical bodies. Describe the movement of the moon relative to the Earth. Describe the movement of the Earth and other planets, relative to the sun in the solar system. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky 	<ul style="list-style-type: none"> Stars, planets and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over distance. Objects with larger masses exert bigger gravitational forces. Objects like planets, moons and stars spin. Smaller mass objects like planets orbit large mass objects like stars. Stars produce vast amounts of heat and light. All other objects are lumps of rock, metal or ice and can be seen because they reflect the light of stars. 	planet solar system dwarf planet satellite celestial body rotate eclipse orbit axis spherical	Mai Jemison Tim Peake Astronauts Careers Astronaut Aeronautical engineer Astrophysicist	
5	Forces <ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Recognise that some mechanisms, including levers, pulleys and gears allow a smaller force to have a greater effect. 	<ul style="list-style-type: none"> Air resistance and water resistance are forces against motion caused by objects having to move air and water out of their way. Friction is a force against motion caused by two surfaces rubbing against each other Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move 	gravity air resistance water resistance friction mechanism accelerate pulley gear brake theory of gravitation	Isaac Newton Discovered gravity Careers Aeronautical engineer Builder Mechanical engineer	
Year 6	Working Scientifically <ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with 				

	<p>increasing accuracy and precision, taking repeat readings when appropriate</p> <ul style="list-style-type: none"> recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests 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 identifying scientific evidence that has been used to support or refute ideas or arguments. 				
6	<p>Living Things and Their Habitats</p> <ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. 	<ul style="list-style-type: none"> Variation exists within a population (and between offspring of some plants) – NB: this Key Idea is duplicated in Year 6 Evolution and Inheritance. Organisms best suited to their environment are more likely to survive long enough to reproduce. Organisms are best adapted to reproduce are more likely to do so. Organisms reproduce and offspring have similar characteristic patterns. Competition exists for resources and mates 	<p>micro-organisms plants animals classification classify animals vertebrates invertebrates fish amphibian reptiles mammal bird</p>	<p>Carl Linnaeus Naturalist and botanist</p> <p>Careers Microbiologist Plant geneticist</p>	
6	<p>Animals Including Humans</p>	<ul style="list-style-type: none"> The heart pumps blood around the body. 	<p>Internal organs heart lungs</p>	<p>Marie M Daly Chemist</p>	

	<ul style="list-style-type: none"> Describe the ways in which nutrients and water are transported within animals, including humans. Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. 	<ul style="list-style-type: none"> Oxygen is breathed into the lungs where it is absorbed by the blood. Muscles need oxygen to release energy from food to do work. (Oxygen is taken into the blood in the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.) 	<p>liver kidney brain muscle muscular digest digestion digestive circulatory system blood blood vessels diet exercise drugs</p>	<p>Careers Cardiologist Haematologist</p>	
6	<p>Light</p> <ul style="list-style-type: none"> Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into our eyes. Explain that we see things because light travels from light sources to our eyes or from light sources to objects then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as objects that cast them. 	<ul style="list-style-type: none"> Animals see light sources when light travels from the source into their eyes. Animals see objects when light is reflected off that object and enters their eyes. Light reflects off all objects (unless they are black). Non shiny surfaces scatter the light, so we do not see the beam. Light travels in straight lines 	<p>light travel straight reflect reflection light source object shadow periscope mirror rainbow filters</p>	<p>CV Raman Physicist</p> <p>Careers Architect Ophthalmologist</p>	
6	<p>Electricity</p> <ul style="list-style-type: none"> Compare and give reasons for variations in how components function, including brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram. Associate the brightness of a lamp of the volume of a buzzer with the 	<ul style="list-style-type: none"> Batteries are a store of energy. This energy pushes electricity round the circuit. When the battery's energy is gone it stops pushing. Voltage measures the 'push.' The greater the current flowing through a device the harder it works. Current is how much electricity is flowing round a circuit. 	<p>electricity voltage cell volume circuit diagram series circuit switch bulb buzzer motor component</p>	<p>Nikola Tesla Inventor/electrical engineer</p> <p>Careers Electrician Renewable energy engineer</p>	

	number and voltage of cells used in the circuit.	<ul style="list-style-type: none"> • When current flows through wires heat is released. • The greater the current, the more heat is released 	symbols		
6	<p>Evolution and Inheritance</p> <ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	<ul style="list-style-type: none"> • Life cycles have evolved to help organisms survive to adulthood. • Over time the characteristics that are most suited to the environment become increasingly common. 	living things fossils offspring vary characteristics variation evolution inherit inheritance adaptation non-identical advantageous non-advantageous	Rosalind Franklin Discovered the structure of DNA Charles Darwin Careers Archaeologist Geneticist Palaeontologist	