



Long Term Plan for Science

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	<p><b>Animals Including humans (Biology)</b> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p><b>Animals Including humans (Biology)</b> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals, including pets.</p>	<p><b>Everyday Materials (Chemistry)</b> 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 everyday 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.</p>		<p><b>Plants (Biology)</b> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p>	<p><b>Plants (Biology)</b> Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>
	<p><b>Key Vocabulary:</b> animals; human; touch; skin; taste; mouth, tongue; hear; sight; smell; nose; ear; eye; face; leg; foot; ankle; knee; toe; arm; hand; finger; thumb; head; neck; elbows; salty; sour; bitter; rough; smooth; dry; wet; moist; hot; cold; icy; <b>Scientists to consider:</b> Charles Darwin; David Attenborough; Steve Irwin; Jane Goodall; Diane Fossey; Gerald Durrell.</p>	<p><b>Key Vocabulary:</b> animals; human; fish; reptile; amphibian; bird, mammal; vertebrate; invertebrate; carnivore; omnivore; herbivore; feathers; scales; fur; hair; environment; habitat; pets; wild; consumer; food chain. <b>Scientists to consider:</b> Charles Darwin; David Attenborough; Steve Irwin; Jane Goodall; Diane Fossey; Gerald Durrell.</p>	<p><b>Key Vocabulary:</b> materials; properties; hard; soft; stretchy; elastic; stiff; shiny; dull; rough; smooth; bendy; not bendy; flexible; rigid; solid; liquid; waterproof; absorbent; not absorbent; transparent; opaque; brick; wood; plastic; metal; fabric; wool; foil; elastic; man made; natural; manufactured; object. <b>Scientists to consider:</b> Isaac Newton; Galileo Galilei; Robert Hooke</p>		<p><b>Key Vocabulary:</b> plant; leaf/ves; flower; blossom; petal; fruit; bud; root; bulb; seed; trunk; branches; stem; wild; garden; common; tree; deciduous; evergreen; earth; soil; dead; healthy; alive; living; grow(ing); <i>Pupils create lists of common flowers/plants seen in/around the local area with photographs of the plants at different times of the year/stages in their life cycle e.g. dandelion.</i> <b>Scientists to consider:</b> Beatrix Potter; Charles Darwin; David Attenborough; David Bellamy; Agnes Arber.</p>	
	<p><b>Seasonal changes (Physics)–</b> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. <b>Key Vocabulary:</b> autumn; winter; spring; summer; seasons; sun; light; day; night; rain; sleet; snow; blizzard; freezing; frost; ice; rain; mist; fog; wind; temperature; hot; cold; cool; weather; forecast; clouds; thunder; lightning; environment; air; (Consider also using local and common phrases about the weather to help pupil understanding of how people discuss the intensity of weather e.g. raining cats and dogs; it's pelting down ) Set up a weather station in class and weather watching stations around the school to record how different areas of the school grounds/local area look in different seasons.</p>					



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2	<p><b>Animals, including humans (Biology)</b></p> <p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p>		<p><b>Uses of Everyday Materials (Chemistry)</b></p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>		<p><b>Plants (Biology)</b></p> <p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p><b>Living Things and Habitats (Biology)</b></p> <p>Explore and compare the differences between things that are living, dead and things that have never been alive.</p> <p>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> <p>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.</p>
	<p><b>Key vocabulary:</b> human; animals; life cycle; grow; growth; young; offspring; reproduce; parent; baby; toddler; child; teenager; adult; mature; elderly; water; air; oxygen; food; diet; balanced diet; variety; germs; bacteria; diseases; parasites; bugs; infection; hygiene; cleanliness; medicines; safety; habitat; survive; food plate/pyramid; proteins; fats; carbohydrates; fibre; minerals; vitamins; sugary foods; dairy foods; energy; calorie; taste; sweet; sour; salty; move; exercise; fitness; heart; heart rate; pulse; blood; healthy; unhealthy; (Higher level vocabulary may be introduced for HA pupils: contagious; infectious; parasites; respiratory system; digestive system; circulatory system).</p> <p><b>Scientists to consider:</b> Clarence Birdseye; James Lind; Louis Pasteur; Edward Jenner.</p>	<p><b>Key vocabulary:</b> (Build on Year 1 word list) materials; natural; man-made; manufactured; object; group; properties; change; bake; bend; twist; stretch; squash; heat; cool; freeze; melt; boil; metal; plastic; wood; paper; glass; clay; rock; fabric; sand; hard; soft; rough; smooth; shiny; dull; bendy; waterproof; absorbent; non-absorbent; strong; weak; magnetic; non-magnetic; transparent; opaque; translucent.</p> <p><b>Scientists to consider:</b> John Dunlop; Alexander Parkes; Carl Siemens; Hans Orsted; Joseph Aspin; Leo Baekeland; Charles Goodyear</p>	<p><b>Key Vocabulary:</b> (In addition to Y1) seed; bulb; seedling; mature plant; water; light; temperature; grow(th); healthy; unhealthy; suitable conditions; germinate; live; living; non-living; accelerate; stunted; weak; spindly; wild; commercial; soil; energy; food; producer.</p> <p><b>Scientists to consider:</b> Joseph Banks; Agnes Arber; Joseph Hooker; James Edward Smith; George Washington Carver;</p>	<p><b>Key vocabulary:</b> animal; plant; Habitat; micro-habitat; environment; classify; sort; living things; dead; alive; food chain; healthy; predator; prey; producer; consumer; decomposer; nocturnal; group; adaption; diversity; survive; survival; organism; group; herbivore; carnivore; omnivore; In addition give names of some key local and global habitats that you will explore and animals/plants which live there e.g. woodland; pond; seashore; ocean; rainforest; polar; under a log/rock/bush; on a stony path; canopy; woodlouse; hermit crab; sea weed; bracken; moss; <b>Scientists to consider:</b> Rachel Carson; Nancy Moran; Al Gore; David Attenborough; John Muir; Theodore Roosevelt; Wangari Maathai.</p>		



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3	<p><b>Animals, including humans (Biology)</b> 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 other animals have skeletons and muscles for support, protection and movement.</p> <p><b>Key vocabulary:</b> (build upon KS1) Food groups; composite foods; balanced diet; protein (food for growth); fats &amp; carbohydrates (foods for activity); vitamins, minerals and fibre (foods for health); whole grain; energy; food plate; food pyramid; carnivore; omnivore; herbivore; vegetarian; perspiration; sweat; pulse rate; skeletons; support; protection; movement; organs; muscles; function; structure; vertebrate; vertebrae; invertebrate; oxygen; carbon dioxide; relax; contract; heart; lungs; brain; ribs; skull; bones; spine; joints; attached; femur; patella; tibia; fibula; radius; ulna; digits; tarsals; humerus; clavicle; scapula; skull; spine <b>Scientists to consider:</b> WK Kellogg; Clarence Birdseye; World Health Organisation; Wilhelm Roentgen; Nicola Tesla; Marie Curie; As further study: Pupils could consider replacement materials for bones being used today and developed for the future.</p>	<p><b>Light (Physics)</b> Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the size of shadows change</p> <p><b>Key vocabulary:</b> light; travel; direction; straight; line; opaque; transparent; translucent; reflect; reflective; reflection; surface; sun; source; protect; damage; eyes; shadow; object; dangerous; absence; artificial; natural; patterns; shape; torch; candle; lamp; solid; block; visibility. <b>Scientists to consider:</b> Ibn al-Haytham; Albert Einstein; Eratosthenes; Hendrik Lorentz; Benjamin Thompson</p>	<p><b>Forces and Magnets (Physics)</b> Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces 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 basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p><b>Key vocabulary:</b> force; push; pull; friction; magnet; magnetic; non-magnetic; North pole; South pole; repel; attract; surface; strength; pattern; resistance; direct; contact. <b>Scientists to consider:</b> Isaac Newton; Magnes; Michael Faraday; Albert Einstein.</p>	<p><b>Rocks (Chemistry)</b> 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 from rocks and organic matter.</p> <p><b>Key vocabulary:</b> rock; soil; appearance; grain; crystal; particle; permeable; impermeable; porous; sedimentary; metamorphic; igneous; rock cycle; bedrock; weathering; erosion; organic; peat; humus; loam; absorbent; impervious; molten; lava; fossil; texture; sand; gravel; clay; Moh's scale; sandstone; granite; marble; limestone; flint; slate; chalk; characteristics; volcano; inorganic; organic. <b>Scientists to consider:</b> Mary Anning; Alfred Wegener; Charles Lyell; James Hutton; Vasily Dokuchaev</p>	<p><b>Plants (Biology)</b> 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.</p> <p><b>Key Vocabulary:</b> (Building upon KS1 vocabulary) function; transportation; anchor; nutrients; minerals; fertiliser; air; oxygen; carbon dioxide; photosynthesis; pollination; fertilisation; seed dispersal; reproduction; pest; diseases; overcrowding; wilt; spindly; pale; stunted; life processes; producer; life cycle; germination; dormant; stigma; style; ovary; anther; filament; stamen; sepal; ovule; pollen; nectar; insect. <b>Scientists to consider:</b> Joseph Banks; Agnes Arber; Joseph Hooker; James Edward Smith; George Washington Carver; Beatrix Potter; Charles Darwin; David Attenborough; David Bellamy.</p>	



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4	<p><b>Animals, including humans (Biology)</b> Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p><b>States of Matter (Chemistry)</b> Compare and group materials together, 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.</p>	<p><b>Electricity (Physics)</b> Identify common appliances that run on electricity. Construct a simple series electrical 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 the 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 in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p><b>Sound (Physics)</b> Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and 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</p>	<p><b>Living Things and Habitats (Biology)</b> 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</p>	
	<p><b>Key Vocabulary:</b> (Build on KS1 &amp; Y3) Digestion: digestive system; food; nutrients; mouth; tongue; teeth; oesophagus; stomach; small intestine; large intestine; rectum; anus; mucus; peristalsis; acid; absorption Teeth: carnivore; herbivore; omnivore; tooth; incisor; molar; pre-molar; canine; biting; holding; tearing; grinding; root; gum; jaw bone; tooth decay; plaque; enamel; dentine; pulp Food chains: predator; prey; food chain; producer; consumer; food webs; ecosystem; habitat; apex predator; photosynthesis; decompose; scavenger <b>Scientists to consider:</b> Weston price; Harriette Chick; Justus Von Liebig; Antoine Lavoisier; Louis Pasteur; Theodor Schwann; William Beaumont; Carl Linnaeus;</p>					<p><b>Key Vocabulary:</b> (Build upon properties of materials in KS1 and Y3) matter; solid; liquid; gas; vapour; expand; contract; particles; thermometer; temperature; degrees; Celsius; heating; cooling; freezing; melting; dissolve; soluble; solution; thermometer; energy; change of state; Water Cycle; evaporation; condensation; evaporate; condense; degrees <b>Scientists to consider:</b> Bernard Palissy; Leonardo Da Vinci; Anders Celsius.</p>



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5	<p><b>Animals, including humans (Biology)</b> Describe the changes as humans develop to old age.</p>	<p><b>Earth and Space(Physics)</b> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p> <p><b>Key vocabulary:</b> Sun; Moon; Earth; orbit; planets; moon; celestial body; Mercury; Venus; Mars; Jupiter; Saturn; Uranus; Neptune; Pluto ( as a dwarf planet ); day; night; phases; gravity; gravitational pull; Solar System; Universe; comet; colonise; explore; astronaut; rocket; space station; lunar; lunar cycle; rotate; axis; revolve; sphere; spherical; geocentric; heliocentric; constellation; full moon; gibbous moon; half moon; crescent moon; new moon; waxing moon; waning moon <b>Scientists and Astronomers to consider:</b> Ptolomy; Alhazen; Copernicus; Galileo; Isaac Newton; Albert Einstein; Edwin Hubble; Edmond Halley; Frank Drake; Stephen Hawking; Cecilia Payne-Gaposchkin; Brian Cox; Heidi Hamnel</p>	<p><b>Forces (Physics)</b> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p><b>Living things and their habitats (Biology)</b> Describe differences in life cycles of mammals, amphibian, insects and birds. Describes reproduction in some plants and animals.</p> <hr/> <p>Key vocabulary: (see also KS1 and Lower KS2) reproduce; grow; reproduction; life cycle; mammal; amphibian; insect; bird; fish; reptile; male; female; metamorphosis; germination; fertilisation; pollination; genetic information; gene; genetic information; fruit; seed; embryo; stigma; anther; style; ovary; ovule; carpel; nucleus; pollen; pollen grain; pollen tube; sperm; sexual reproduction; asexual reproduction; egg; birth; growth; adulthood; male; female; off-spring; pupa; chrysalis; pupa; imago; adult; seeds; bulb; tuber; stem; root cutting; Scientists to consider in Upper KS2: Terry Nutkins; Chris Peckham; Isacc Newton; Jane Goodall; David Attenborough; Bill Oddie; BF Skinner; Ivan Pavlov; Galileo; Darwin; Madam Curie; (Vocabulary for HA pupils to explore: angiosperm; gymnosperm; embryo; genome; meiosis; haploid; diploid; generation; gene; gamete; zygote; gestation; chromosome; blastocyst; placenta; mitosis.)</p>	<p><b>Properties and changes of materials (Chemistry)</b> Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), 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 and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</p>	



	<p><b>Key vocabulary:</b>                  viviparous; fertilisation;                  egg cell; sperm cell; zygote;                  foetus; baby; infant;                  toddler; child; adolescent;                  teenager; young adult;                  mature adult; old age;                  elderly; gestation; life                  cycle; species; puberty;                  hormones; pituitary gland;                  testosterone; oestrogen;                  facial hair; body hair; broad                  shoulders; narrow waist;                  (currently not being                  taught) <i>breasts; vagina;                  womb; placenta; uterus;                  ovary; fallopian tube;                  period; penis; testicles</i>  <b>Scientists to consider:</b>                  Charles Darwin; Gerald                  Durrell; Robert Winston;                  Michel Chevreul;</p>		<p><b>Key vocabulary:</b> Gravity;                  gravitational force; friction; force;                  thrust; upthrust; air resistance;                  water resistance; push; pull;                  stationary; contact force; non-                  contact force; buoyancy; zero                  gravity; motion; unsupported                  force; supported force; levers;                  pulleys; gears; springs;                  fulcrum/pivot; hinge; motion;                  particle; surface area; Mass (g &amp;                  kg); Balance;  <b>Scientists to consider:</b> Galileo                  Galilei; Isaac Newton;                  Christopher Cockerell;                  Archimedes;</p>		<p><b>Key vocabulary:</b> (See also KS1 &amp;                  Lower KS2 materials vocabulary)                  freezing; melting; boiling; burning;                  solid; liquid; gas; properties;                  solution; solute; solvent; mixture;                  filter; sieve; evaporation;                  decanting; sieving; condensation;                  saturated; temperature; Celsius;                  state; reaction; chemical;                  reversible; irreversible;                  conductivity; brittle; thermal;                  flexible; waterproof; synthetic;                  absorbent; rigid; natural; hard;                  permeable; impermeable;                  hardness; conductor ; insulator;                  transparent; magnetic; non-                  magnetic  <b>Scientists to consider:</b> Alexander                  Parkes (Plastic); John Dunlop                  (Rubber tyre); Humphrey Davy;                  Marie Curie; John Dalton; Antoine                  Lavoisier; Spencer Silver (glue for                  sticky notes); Ruth Benerito                  (wrinkle free cotton)</p>
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6	<p><b>Light (Physics)</b>                      Recognise that light appears to                      move 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 the eye.                      Explain that we see things because                      light travels from light sources to                      our eyes or from light sources to                      objects and then to our eyes.</p>	<p><b>Electricity (Physics)</b>                      Associate the brightness of a                      lamp or the volume of a                      buzzer with the number and                      voltage of cells used in the                      circuit.                      Compare and give reasons for                      variations in how                      components function,                      including the brightness of                      bulbs, the loudness of</p>	<p><b>Animals including humans (Biology)</b>                      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.                      Describe the ways in which nutrients                      and water are transported within                      animals, including humans.</p>		<p><b>Evolution and Inheritance (Physics)</b>                      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</p>	<p><b>Living Things and Habitats (Biology)</b>                      Describe how living things are classified                      into broad groups according to                      common observable characteristics                      and based on similarities and                      differences, including micro-organisms,                      plants and animals.                      Give reasons for classifying plants and                      animals based on specific                      characteristics.</p>



	<p>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>buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.</p>	<p><b>Key vocabulary:</b> (See also lower KS2 vocabulary for digestion, skeleton &amp; muscles) cardiovascular system; transport; respiration; energy; blood; blood cells; red cells; white cells; plasma; platelets; haemoglobin; capillaries; organ; heart; heart rate; pulse; chamber; atrium; valve; artery; vein; blood vessel; ventricle; aorta; contract; oxygen; oxygenated; deoxygenated; carbon dioxide; exercise; cycle; glucose; vitamins; nutrient; immune system; lungs; alveoli; bronchiole; clot; bronchus; trachea; drugs; medicine; medication; side-effect; addiction; respiratory system; vitamins; minerals; nutrient; anti-body <b>Scientists:</b> William Harvey; Christian Barnard; Magdi Yacoub; Gertrude Elion; Rosalyn Yarrow; Francoise Barré-Sinoussi.</p>	<p>different ways and that adaptation may lead to evolution.</p>	
	<p><b>Key vocabulary:</b> (Build on Y3 vocabulary) reflection; refraction; reflective; opaque; transparent; translucent; light source; shadow; straight; filter; prism; spectrum; optic nerve; retina; iris; lens; rods; cones; pupil; inverse; cornea; plane mirror; convex; concave; optical illusions; filament; focus; optician; luminescence; bioluminescence; incandescent; nocturnal; Infra-red light; light meter; lumens; visible; invisible; telescope; microscope; short sighted; long sighted <b>Scientists to consider:</b> Thomas Young; Sir David Brewster; Jean Bernard-Leo Foucault; Anna Jane Harrison;</p>	<p><b>Key vocabulary:</b> (See also Year 4 'Electricity') Electrical current; circuit; series circuit; symbols; cell; battery; bulb; buzzer; motor; switches; conductor; insulator; safety precautions; electrocution; electric shock; defibrillator; open switch; closed switch; positive terminal; negative terminal; electrons; protons; static electricity; volts; voltage; watts; Ohms; resistance; amps; fuse; earth; live. <b>Scientists to consider:</b> Alessandro Volt; Andre Ampere; James Joule; Georg Ohm; Charles Siemens; Charles Coulomb; Michael Faraday; Thomas Edison.</p>	<p><b>Key vocabulary:</b> (See also lower KS2 vocabulary for digestion, skeleton &amp; muscles) cardiovascular system; transport; respiration; energy; blood; blood cells; red cells; white cells; plasma; platelets; haemoglobin; capillaries; organ; heart; heart rate; pulse; chamber; atrium; valve; artery; vein; blood vessel; ventricle; aorta; contract; oxygen; oxygenated; deoxygenated; carbon dioxide; exercise; cycle; glucose; vitamins; nutrient; immune system; lungs; alveoli; bronchiole; clot; bronchus; trachea; drugs; medicine; medication; side-effect; addiction; respiratory system; vitamins; minerals; nutrient; anti-body <b>Scientists:</b> William Harvey; Christian Barnard; Magdi Yacoub; Gertrude Elion; Rosalyn Yarrow; Francoise Barré-Sinoussi.</p>	<p><b>Key vocabulary:</b> (Build upon rocks/fossils vocabulary from LKS2) Adapt; adaptation; evolution; inheritance; reproduce; reproduction; fertilise; fertilisation; genes; chromosomes; characteristics; variation; natural selection; selective breeding; generation; species; trait; desirable; mutations; heredity; reproduce; diversity; survival; extinct; off spring; parents; identical; cloning; genetic engineering; naturalist; habitat; predator; prey; organisms; life cycles; Geology; Palaeontologist; Cambrian; Ordovician; Devonian; Silurian; Jurassic; Tertiary; Palaeozoic; Triassic; Carboniferous; Quarternary; Cretaceous; Permian; Cenozoic; Mesozoic. <b>Scientists:</b> Mary Anning; Charles Darwin; Alfred Wallace; Lynn Margulis; Ernst May; Charles Lyell; Teodosius Dobzhansky; Gregor Mendel; Barbara McClintock; James Watson; Francis Crick.</p>	<p><b>Key vocabulary:</b> classification system; taxonomy; vertebrates; invertebrates; micro-organisms; plants; algae; mosses; liverworts; ferns; horsetails; conifers; flowering plants; animals; insects; spiders; snails; segmented worms; fish; amphibians; reptiles; birds; mammals; echinoderms; molluscs; crustaceans; flat worms; round worms; phylum; class; order; family; genus; species; fungi; bacteria; virus; protists; vaccination; symbiotic; parasite; toxins; unicellular; multi-cellular; autotroph; heterotroph; membrane; cell; nucleus; DNA; exoskeleton; <b>Scientists to consider:</b> Carl Linnaeus; Evelyn Cheesman; Hans Sloane; Gilbert White</p>



## Links to spirituality

- Exploring patterns and connections in mathematics, fostering a sense of wonder and awe at the beauty and order in the universe.

Forces Y3,Y5

Earth and Space Y5

- By considering pattern, order, symmetry and scale both man-made and in the natural world.

Rocks Y3

Plants Y1-Y3

- Studying the natural world and considering questions about the origins of life, the universe, and our place within it.

Animals Including Humans Y1-Y6

Plants Y1-Y3

Earth and Space Y5

Evolution and Inheritance Y6

Living Things and their Habitats Y2, Y4, Y5, Y6

- By demonstrating openness to the fact that some answers cannot be provided by Science.

States of Matter Y4

Earth and Space Y5



- By creating opportunities for pupils to ask questions about how living things rely on and contribute to their environment

Animals Including Humans Y1-Y6

Living Things and their Habitats Y2, Y4, Y5, Y6

Plants Y1-Y3

- Delight in discovering how things work.

Materials Y1, Y2, Y5

Light Y3, Y6

Forces Y3, Y5

Electricity Y4, Y6

- Opportunities to linger longer on the wonder!

Animals Including Humans Y1-6

Plants Y1-Y3

Living Things and their Habitats Y2, Y4, Y5, Y6

Rocks Y3

Sound Y4

Earth and Space Y5

Evolution and Inheritance Y6

