Science Phase Overview

UKS2. 2 Year Cycle

Animals including Humans	Living things and Habitats	Evolution and Inheritance	Properties and Changes of Materials	Light	Forces and Magnets	Earth and Space	Electricity
A1: I can describe the changes as humans develop to old age.	**LH1:** I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	**EI 1:** I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.	**P1:** I can 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.	**L1:** I can recognise that light appears to travel in straight lines.	**F1:** I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	**ES1:** I can describe the movement of the Earth and other planets relative to the sun in the solar system.	**E1:** I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
A2: I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	**LH2:** I can describe the life process of reproduction in some plants and animals.	**EI 2:** I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	**P2:** I can know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	**L2:** I can 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.	**F2:** I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	**ES2:** I can describe the movement of the moon relative to the Earth.	**E2:** I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
A3: I can recognise the impact of diet, exercise, drugs and lifestyle on the way their body functions.	**LH3:** I can describe how living things are classified into broad groups according to common observable	**EI 3:** I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation	**P3:** I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through	**L3:** I can explain that we see things because light travels from light sources to our eyes or from light sources to objects	**F3:** I can recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	**ES3:** I can describe the sun, Earth and moon as approximately spherical bodies.	**E3:** I can use recognised symbols when representing a simple circuit in a diagram.

	characteristics and based on similarities and differences, including micro-organisms, plants and animals.	may lead to evolution.	filtering, sieving and evaporating.	and then to our eyes.			
A4: I can describe the ways in which nutrients and water are transported within animals, including humans.	**LH4:** I can give reasons for classifying plants and animals based on specific characteristics.		**P4:** I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	**L4:** 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.		**ES4:** I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	
			P5: I can demonstrate that dissolving, mixing and changes of state are reversible changes.				
			P6: I can 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.				

Cycle A

Autumn		Spring		Summer	
Electricity	Light	Evolution and Inheritance	Properties and changes of Materials	Animals including Humans	Animals including Humans
E1, E2, E3	L1, L2, L3, L4	EI1, EI2, EI3	P1, P2, P3, P4, P5, P6	A2, A3, A4	A2, A3, A4
Subject Specific Vocabulary					
circuit diagram, circuit symbol, voltage	straight lines, light rays	offspring, sexual reproduction, vary, characteristics, adapted, inherited, species, evolve, evolution	thermal insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle
I will…					
• Compare and give reasons for why components work and do not work in a circuit • Draw circuit diagrams using correct symbols • Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.	• Know how light travels • Know and demonstrate how we see objects • Know why shadows have the same shape as the object that casts them • Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.	• Know how the Earth and living things have changed over time • Know how fossils can be used to find out about the past • Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents) • Know how animals and plants are adapted	• Compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets • Know and explain how a material dissolves to form a solution • Know and show how to recover a substance from a solution • Know and demonstrate how some materials can be	• Identify and name the main parts of the human circulatory system • Know the function of the heart, blood vessels and blood • Know the impact of diet, exercise, drugs and lifestyle on health • Know the ways in which nutrients and water are transported in animals, including humans	• Identify and name the main parts of the human circulatory system • Know the function of the heart, blood vessels and blood • Know the impact of diet, exercise, drugs and lifestyle on health • Know the ways in which nutrients and water are transported in

		to suit their environment • Link adaptation over time to evolution • Know about evolution and can explain what it is	separated (e.g. through filtering, sieving and evaporating) • Know and demonstrate that some changes are reversible, and some are not • Know how some changes result in the formation of a new material and that this is usually irreversible		animals, including humans

Cycle B

Autumn		Spring		Summer	
Animals including Humans	Living things and Habitats	Earth and Space	Forces and Magnets	Living things and Habitats	Living things and Habitats
A1	LH1, LH2	ES1, ES2, ES3, ES4	F1, F2, F3	LH3, LH4	LH3, LH4
Subject Specific Vocabulary					
puberty, the vocabulary to describe sexual characteristics in line with the school's RSE policy	life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, cuttings	Sun, Moon, Earth, planets (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, Solar System, rotate, star, orbit	force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears	vertebrates, fish, amphibians, reptiles, birds, mammals, warm-blooded, cold-blooded, invertebrates, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers	vertebrates, fish, amphibians, reptiles, birds, mammals, warm-blooded, cold-blooded, invertebrates, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers
I will…					
	• Know the life cycle of different living creatures, e.g. mammal, amphibian, insect, bird • Know the differences between different life cycles • Know the process of reproduction in plants • Know the process of reproduction in animals • Create a timeline to indicate stages of growth in humans	• Know about and explain the movement of the Earth and other planets relative to the Sun • Know about and explain the movement of the Moon relative to the Earth • Know and demonstrate how night and day are created	• know what gravity is and its impact on our lives • identify and know the effect of air resistance • identify and know the effect of water resistance • identify and know the effect of friction • explain how levers, pulleys and gears allow a	• classify living things into broad groups according to observable characteristics and based on similarities & differences • know how living things have been classified • give reasons for classifying plants and animals in a specific way	• classify living things into broad groups according to observable characteristics and based on similarities & differences • know how living things have been classified • give reasons for classifying plants and animals in a specific way

		• Describe the Sun, Earth and Moon (using the term spherical)	smaller force to have a greater effect		