



Whole School Key Knowledge and Vocab: Science

Animals, including Humans

	EYFS	Year 1 / 2	Year 3 / 4	Year 5/6
Curriculum Objectives	<ul style="list-style-type: none"> Identify different parts of their body. Have some understanding of healthy food and the need for variety in their diets. Be able to show care and concern for living things. Know the effects exercise has on their bodies. Have some understanding of growth and change. Can talk about things they have observed including animals. Understand that we should treat all animals carefully and with respect. Describe how some animals are pets and some animals are wild. Observe and describe similarities and differences between animals. 	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 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>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</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Describe the changes as humans develop to old age</p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p>

Vocabulary	Head Shoulders Arms Legs Feet Hands Ear Eye Nose Mouth Knee	fish amphibians mammals birds reptiles herbivore omnivore carnivore predator prey food chain senses	Maturity Reproduce Die Offspring Life cycle Food chain (from 'Animal survival' y1) producer Consumer organisms growth energy	Vertebrates Invertebrates Skeleton Exoskeleton Vital organs Support Mass Muscles Connect Contract	Meat Dairy Protein Grains Root vegetable Carbohydrates Fat Insulation Fruits Minerals Vitamins Fibre Healthy Digestion	Oxygen Sugar (Glucose) Lungs Muscles Circulation heart	adolescent baby fetus life cycle milestone womb period reproduce hormone life span gestation
Cycle		Cycle B <i>Autumn 1 Spring 2</i>	Cycle A <i>Autumn 1, Autumn 2 Spring 2 Summer 2, Summer 4</i>	Cycle B <i>Autumn 1, Autumn 2, Autumn 3</i>	Cycle A <i>Summer 4, Summer 5</i>	Cycle A <i>Spring 2</i>	Cycle B <i>Summer 3, Summer 4</i>

Living Things and their Habitats

	EYFS	Year 1 / 2	Year 3 / 4	Year 5/6
Curriculum Objectives	<ul style="list-style-type: none"> • Comment and question about the place they live or the natural world. • Show care and concern for living things and the environment. • Can talk about things they have observed such as plants and animals. • Describe features of objects in their environment. • Comment and ask questions about their familiar world. • Observe and describe different animal habitats in the local environment 	<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</p> <p>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>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals</p> <p>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</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p>

	<ul style="list-style-type: none"> Observe and describe how these habitats change with the seasons. 						
Vocabulary	Names of animals and plants that live in the school grounds, habitat, survive, living, non-living, safe, warm, cold, similar, different, food, nutrients, change (adapt).	Variation Habitat Adapted Survive Avoid Wild plant Garden plant		Classification Classification key 'Survival') Insect Environmental change		Organism Excretion Re-production Vertebrate Invertebrate Mollusc Arachnids Microorganism Viruses Fungi	
Cycle			Cycle A <i>Spring 2 Summer 2, Summer 4</i>		Cycle A <i>Autumn 1, Autumn 2 Spring 2 Summer 1, Summer 2</i>	Cycle A <i>Spring 3 Summer 1, Summer 4</i>	Cycle B <i>Autumn 1</i>
Plants							
	EYFS	Year 1 / 2	Year 3 / 4	Year 5/6			
Curriculum Objectives	<ul style="list-style-type: none"> Develop an understanding of growth. Shows care and concern for living things and the environment. Make observations of plants and explain why some things occur, and talk about changes. Can talk about some of the things they have observed, such as plants. Understand that most plants start growing from a bulb or seed 	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</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>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>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</p> <p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p>				

	<ul style="list-style-type: none"> Observe and describe how plants need water and sunlight to grow Talk about the purpose of roots for collecting water, and leaves for absorbing sunlight. 				
Vocabulary	Seed Bulb Leaves Germination Roots Shoots	generations flowering reproduction germination	Pollination Seed (from yr 1 'Plants') Stamen Stigma Ovaries Petals Dispersal Germination (from yr 1 'Plants')	Carbon dioxide Oxygen Roots Soil Leaves	
Cycle		Cycle B <i>Spring 1, Spring 5 Summer 1, Summer 2</i>	Cycle A <i>Spring 1, Spring 3 Summer 1, Summer 3</i>	Cycle B <i>Summer 1, Summer 4</i>	
Materials					
	EYFS	Year 1 / 2	Year 3 / 4	Year 5/6	

Curriculum Objectives	<ul style="list-style-type: none"> Identify that there are many different materials that have different describable and measurable properties. Compare materials and identify that they have similar properties and are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass). Describe how properties of a material determine whether they are suitable for a purpose. 	<p>Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</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>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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>		
Vocabulary	Similar, same, different, soft, squashy, shiny, waterproof, sturdy, rough, smooth, metal, plastic, wood, fabric, mud, soil, paper, absorbent, water resistant, repellent, soft, hard, bumpy, round, curved, flat, light, dark, heavy, moist, dry, wet, humid, hot.	Properties Metal Rock Fabric Wood Plastic Ceramic Suitable Purpose	changed physical force absorb crumbly property drag suitable strongest flexible			Transparent Translucent Opaque lifespan		
Cycle			Cycle B <i>Autumn 3</i>	Cycle A <i>Autumn 3</i>			Cycle A <i>Spring 1</i> <i>Summer 2</i>	
Rocks - Year 3								

Curriculum Objectives	<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>	
Vocabulary	<p>Rock (from 'Describing Materials' yr 1)</p> <p>Crystal / Mineral / Ore / Grains / Fossil / Sedimentary / Igneous / Metamorphic / Porosity</p> <p>Hardness / Soil / Humus / Silt</p>	<p>Million / Billion / Evolution / Extinct / Fossil / Palaeontologist</p> <p>Organism / Microorganism / Bacteria / Microscope</p>
Cycle	<p style="text-align: center;">Cycle B</p> <p style="text-align: center;"><i>Autumn 5 Spring 1, Spring 2</i></p>	
States of Matter - Year 4		
Curriculum Objectives	<p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>	
Vocabulary	<p>State / Solid / Liquid / Gas / Gravity / Viscous / Heating / Cooling / Melting / Boiling / Evaporate / Freeze / Condense</p>	<p>Matter</p> <p>Mass</p> <p>React</p> <p>Irreversible</p>
Cycle	<p style="text-align: center;">Cycle A</p> <p style="text-align: center;"><i>Autumn 3</i></p>	

Electricity			
	Year 1 / 2	Year 3 / 4	Year 5/6

Curriculum Objectives		<p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>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</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p> <p>Use recognised symbols when representing a simple circuit in a diagram</p>	
Vocabulary		<p>Electricity</p> <p>Batteries</p> <p>Mains electricity</p> <p>Device</p> <p>Wires</p> <p>Circuit</p> <p>Conductor</p> <p>Insulator</p>	<p>Current</p> <p>Voltage</p> <p>Volts</p> <p>Conductor</p> <p>Resistance</p> <p>Resistor</p>	
Cycle			Cycle A <i>Spring 3</i>	Cycle B <i>Autumn 2</i>

Earth and Space - Year 5

	EYFS	Upper KS2
	<ul style="list-style-type: none"> • Talk about astronauts and the jobs they do when they go into space • Talk about each planet and what it might be like there. Talk about the different landscapes and environments, such as the planets made of dust, rock or ice. • Look at a globe and talk about Earth • Talk about day and night 	<p>Describe the movement of the Earth and other planets relative to the sun in the solar system</p> <p>Describe the movement of the moon relative to the Earth</p> <p>Describe the sun, Earth and moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>

Vocabulary	Planet Names Earth Sun Moon	Solar System / Planets / Orbit / Star / Moon / Rotating / Day / Year / Galaxy / Universe / Asteroid / Comet / Gravity / Mass
Cycle	Cycle A <i>Autumn 2</i>	

Seasonal Changes - Year 1

	EYFS	Year 1/2
Curriculum Objects	<ul style="list-style-type: none"> Looks closely at similarities, differences, patterns and change. Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as weather and seasons. Talks about why things happen and how things work. 	Observe changes across the 4 seasons . Observe and describe weather associated with the seasons and how day length varies
Vocabulary	spring summer autumn winter	hibernating migration evergreen deciduous
Cycle		Cycle B <i>Autumn 2, Autumn 4 Spring 4 Summer 4</i>

Sound - Year 4

Curriculum Objectives	<p>Identify how sounds are made, associating some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p>
Vocabulary	Sound / Pitch / Volume / Vibration / Ear drum / Frequency / Amplitude
Cycle	<p>Cycle A</p> <p><i>Spring 1</i></p>

Light			
	Year 1 / 2	Year 3 / 4	Year 5/6
Curriculum Objectives		<p>Recognise that they need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change</p>	<p>Recognise that light travels in straight lines</p> <p>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</p> <p>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>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>
Vocabulary		<p>Light</p> <p>Shiny</p> <p>Transparent</p>	<p>Shadow</p> <p>Opaque</p> <p>Translucent</p>

		Opaque Reflective Translucent	Reflection Pupil
Cycle		Cycle B <i>Spring 3</i>	Cycle B <i>Spring 1</i>

Forces and Magnets

	Year 1 / 2	Year 3 / 4	Year 5/6
Curriculum Objectives		<p>Compare how things move on different surfaces</p> <p>Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</p> <p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>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</p> <p>Describe magnets as having 2 poles</p> <p>Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to</p>
Vocabulary		Magnet Force Attraction Repulsion Metal Non-Contact Force Pole	Water resistance Air resistance Friction undulations Interlock Gears Pulley Lever
Cycle		Cycle B <i>Summer 2, Summer 3</i>	Cycle A <i>Autumn 1</i>

Evolution and Inheritance - Year 6

Curriculum Objectives	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
Vocabulary	Evolution / Natural selection / Population / Variation / Competition / Adapted / Offspring / Inheritance / Charles Darwin / Lamarck / HMS Beagle
Cycle	Cycle B <i>Summer 1, Summer 2, Summer 3</i>