

Subject Lead Progression Maps

The Subject Progression Maps outline the content that is taught in each subject within our Inspire Curriculum. They provide clear progression and sequencing within individual subjects for each year group. The knowledge and skills have been mapped out to ensure previous learning is built upon progressively each year.

Science Progression Map		
Topic	Year Group	Content
Plants	Year 1	<ul style="list-style-type: none">• Describe and name the petals, stem, leaf, bulb, flower, seed, stem and root of a plant• Identify and name a range of common plants and trees• Name the trunk, branches and root of a tree
	Year 2	<ul style="list-style-type: none">• Describe what plants need to survive• Observe and describe how seeds and bulbs grow into mature plants

Science Progression Map		
Topic	Year Group	Content
		<ul style="list-style-type: none"> Investigate and describe the impact of removing light, soil or water from a growing or germinating plant.
	Year 3	<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 requirement of plants for life and growth (air, light, water, nutrients from soil, and room to grow) 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
	Year 5	<ul style="list-style-type: none"> Describe the life process of reproduction in some plants and animals.
Animals including Humans	Year 1	<ul style="list-style-type: none"> Identify some of the differences between different animals Identify living and non-living things Identify and name a variety of common animals Describe how an animal is suited to its environment Identify and name a variety of common animals that are carnivores, herbivores and omnivores Identify the main parts of the human body.
	Year 2	<ul style="list-style-type: none"> Describe what animals need to survive Explain that animals grow and reproduce Explain why animals have offspring which grow into adults Describe the life cycle of some living things (e.g. egg, chick, chicken) Explain the basic needs of animals, including humans for survival (water, food, air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
	Year 3	<ul style="list-style-type: none"> Explain the importance of a nutritionally balanced diet Describe how nutrients, water and oxygen are transported within animals and humans Identify that animals, including humans, cannot make their own food: they get nutrition from what they eat Describe and explain the skeletal system of a human Describe and explain the muscular system of a human
	Year 4	<ul style="list-style-type: none"> Identify, name and describe the functions of the basic parts of the digestive system in humans Identify the simple function of different types of teeth in humans Compare the teeth of herbivores and carnivores Identify, construct and interpret a variety of food chains, identifying producers, predators and prey
	Year 5	<ul style="list-style-type: none"> Describe the changes as humans develop to old age Use basic ideas of inheritance, variation and adaptation to describe how living things have changed over time
	Year 6	<ul style="list-style-type: none"> 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

Science Progression Map		
Topic	Year Group	Content
		<ul style="list-style-type: none"> Describe the ways in which nutrients and water are transported within animals and plants, including humans
Materials	Year 1	<ul style="list-style-type: none"> Distinguish between an object and the material from which it is made Describe materials using their senses, using specific scientific words Explain what material objects are made from Explain why a material might be useful for a specific job Name some different everyday materials e.g. wood, plastic, metal, water and rock Sort materials into groups by a given criterion Explain how solid shapes can be changed by squashing, bending, twisting and stretching
	Year 2	<ul style="list-style-type: none"> Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of materials based on their simple physical properties Explore how the shapes of solid objects can be changed (squashing, bending, twisting, stretching) Find out about people who developed useful new materials (John Dunlop, Charles Macintosh, John McAdam) Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, cardboard for particular uses
	Year 5	<ul style="list-style-type: none"> Changing state – see States of Matter
Living Things and their Habitats	Year 2	<ul style="list-style-type: none"> Match certain living things to the habitats they are found in Explain the differences between living and non-living things Describe some of the life processes common to plants and animals, including humans Describe how a habitat provides for the basic needs of things living there Describe how some animals get their food using basic food chains Describe how plants and animals are suited to their habitat
	Year 4	<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways Classify and identify into broad groups Explore and use a classification key to group, identify and name a variety of living things (plants, vertebrates, invertebrates) Recognise that environments can change and this can sometimes pose a danger to living things Explain how environmental changes have an impact on living things
	Year 5	<ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, amphibians, an insects and a bird Identify the reproductive processes of some animals Describe the life cycles of common plants Explore the work of well know naturalists and animal behaviourists (David Attenborough and Jane Goodall)
	Year 6	<ul style="list-style-type: none"> Identify and name the parts of the human circulatory system, Describe the functions of the heart, blood vessels and blood.

Science Progression Map		
Topic	Year Group	Content
		<ul style="list-style-type: none"> Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function (both positive and negative) Describe how nutrients are transported in humans and other animals.
Light	Year 3	<ul style="list-style-type: none"> Recognise that they need light in order to see things Recognise 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 Explain the difference between transparent, translucent and opaque
	Year 6	<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 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 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
Forces	Year 3	<ul style="list-style-type: none"> Compare how things move on different surfaces Observe that magnetic forces can be transmitted without direct contact Observe how some magnets attract or repel each other Identify and classify which everyday materials are attracted to magnets and which are not Notice that some forces need contact between two objects, but magnetic forces can act at a distance Describe magnets have having two poles (N & S) and predict whether two magnets will attract or repel each other depending on which poles are facing Make and record a prediction before testing
	Year 5	<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 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
States of Matter	Year 4	<ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases Explain what happens to materials when they are heated or cooled Measure or research the temperature at which different materials change state in degrees Celsius Describe how materials change state at different temperatures Use measurements to explain changes to the state of water

Science Progression Map		
Topic	Year Group	Content
		<ul style="list-style-type: none"> Explain everyday phenomena including the water cycle
	Year 5	<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 thermal), and response to magnets Explain how some materials dissolve in liquid to form a solution Explain what happens when dissolving occurs Use their knowledge of solids, liquids and gases to decide and describe how mixtures might be separated, including through filtering, sieving, evaporating Give reasons, based on evidence for comparative and fair tests for the particular uses of everyday materials, including metals wood and plastic Describe changes using scientific words (evaporation, condensation) 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 Use the terms 'reversible' and 'irreversible'
Electricity	Year 4	<ul style="list-style-type: none"> Identify common appliances that run on electricity Construct a simple series electric circuit Identify and name the basic part in a series circuit, including cells, wires, bulbs, switches and buzzers Recognise symbols to represent simple series circuit diagrams 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 Associate a switch opening with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators Associate metals with being good conductors
	Year 6	<ul style="list-style-type: none"> Identify and name the basic parts of a simple electric series circuit (cells, wires, bulbs, switches, buzzers) Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers, the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram
Seasonal Change	Year 1	<ul style="list-style-type: none"> Observe changes across the four seasons Name the four seasons in order Observe and describe weather associated with the seasons Observe and describe how day length varies

Science Progression Map		
Topic	Year Group	Content
Rocks	Year 3	<ul style="list-style-type: none"> • Compare and group together different rocks on the basis of their appearance and simple physical properties • Describe and explain how different rocks can be useful to us • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Describe and explain the differences between sedimentary and igneous rocks, considering the way they are formed • Recognise that soils are made from rocks and organic matter
Sound	Year 4	<ul style="list-style-type: none"> • Describe a range of sounds and explain how they are made • Associate some sounds with something vibrating • Compare sources of sound and explain how the sounds differ • Explain how to change a sound (louder/softer) • Recognise how vibrations from sound travel through a medium to an ear • Describe the relationship between the pitch of the sound and the features of its source/object that produces it • Find patterns between the volume of the sound and the strength of the vibrations that produced it, and the distance of the source • Investigate how different materials can affect the pitch and volume of sounds
Earth and Space	Year 5	<ul style="list-style-type: none"> • Identify and explain the movement of the Earth and other planets relative to the sun in the solar system • Explain how seasons and the associated weather is created • Describe and explain 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
Evolution	Year 6	<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 • Give reasons why offspring are not identical to each other or to their parents • Explain the process of evolution and describe the evidence for this • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

Science Key Vocabulary						
Topic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud	As for year 1 plus - light, shade, sun, warm, cool, water, grow, healthy, germinate	photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal		reproduction, sexual, asexual, plantlets, cuttings.	
Animals including Humans	head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves	offspring, reproduction (all things reproduce, not the process), growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)	nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints	digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Vocab to be decided alongside PSHE puberty topic	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle
Materials	object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay,	Names of materials – increased range from year 1 Properties of materials - as for year 1 plus opaque, transparent and			thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-	

Science Key Vocabulary						
Topic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through	translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing. Bend/bending, stretch/stretching			reversible change, burning, rusting, new material	
Living Things and their Habitats		living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland etc., names of micro-habitats e.g. under logs, in bushes etc.		classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering
Light			light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous			As for year 3 plus straight lines, light rays.
Forces			force, push, pull, twist, contact force, non-contact force, magnetic force,		force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple	

Science Key Vocabulary						
Topic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole		machines, levers, pulleys, gears	
States of Matter				solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material	
Electricity				electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator,		circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage - NB Children do not need to understand what voltage is but will use volts and voltage to describe different batteries. The words cells and batteries are

Science Key Vocabulary						
Topic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				metal, non-metal, symbol		now used interchangeably
Seasonal Change	weather (sunny, rainy, windy, snowy etc.), seasons (Winter, Summer, Spring, Autumn), sun, sunrise, sunset, day length, monsoon, khareef, thunder storm					
Rocks			Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil			
Sound				sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation		
Earth and Space					Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune) spherical, solar	

Science Key Vocabulary						
Topic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					system, rotates, star, orbit, planets	
Evolution						Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils