

Science Curriculum Map starting September 2016

Science	Year 1 / 2 A	Year 1 / 2 B	Year 3 / 4 A	Year 3 / 4 B	Year 5 / 6 A	Year 5 / 6 B
The first section to be applied age appropriately whatever the subject matter being studied.						
Working Scientifically						
Questioning	ask simple questions	ask simple questions	ask relevant questions	ask relevant questions	ask questions which can be investigated	ask questions which can be investigated
Observing & recording	Observe closely, use to ask questions	Observe closely, use to ask questions, record simple data	Make measurements	Analyse data	Take measurements with increasing accuracy	Take measurements with increasing accuracy
Equipment	Simple (hand lenses, egg timers)	Simple (hand lenses, egg timers)	Measuring devices, thermometers	Measuring devices, thermometers	A range scientific equipment – stopwatch, scales, spring balance	A range scientific equipment – ph meter, scales, spring balance
Testing	Do simple tests	Do simple tests	Design simple tests	Design simple tests	Plan enquiries, recognise and control variables	Plan enquiries, recognise and control variables
Categorising	Identify and classify	Identify and classify	Identify differences & similarities	Identify differences & similarities	Classification tables	Classification tables
Reporting			Oral & written explanation, displays & presentations	Oral & written explanation, displays & presentations	Oral & written reports, tables, diagrams with labels, bar & line graphs, models	Oral & written reports, tables, diagrams with labels, bar & line graphs, models
Draw conclusions			Suggest improvements, predict further tests	Suggest improvements, predict further tests	Explain causal relationships	Explain causal relationships
Use Evidence			To answer questions, support findings	To answer questions, support findings	Make predictions and set up & set up further fair tests	Make predictions and set up & set up further fair tests
Earth & Space						
SUN	observe the sun's apparent movement, be aware of seasons		Recognise that light from the sun can be dangerous and that there are ways to protect their eyes		Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the Sun, Earth and Moon as approximately spherical bodies Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	use Earth's rotation to describe day and night, describe Earth's orbit in relation to the Sun
MOON					Describe the movement of the Moon relative to the Earth	Describe the moon's orbit
SEASONAL CHANGES	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies				Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	
Living Things						
PLANTS	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.	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.	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.	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	Describe the life process of reproduction in some plants and animals.	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.
ANIMALS	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 (fish, amphibians, reptiles, birds and mammals, including pets)	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 and air)	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.	Identify, classify into groups (e.g. fish, amphibians, reptiles, birds, mammals) then give reason why Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals.	Describe the ways in which nutrients and water are transported within animals, including humans.
HUMANS	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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.	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	Describe the changes as humans develop to old age.	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
HABITATS		explore and compare the differences between things that are living, dead, and things that have never been alive 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 Identify and name a variety of plants and animals in their habitats, including microhabitats		Recognise that environments can change and that this can sometimes pose dangers to living things.		

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FOOD CHAINS		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.				
ROCKS			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			
INHERITANCE				Identify how living things resemble their parents in many features		Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
EVOLUTION				Recognise that fossils provide information about living things		Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
ADAPTATION				Identify how living things are suited to & adapt to their environments		Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Everyday Materials						
MATERIALS	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.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses			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	
SOLID, LIQUID, GASES	Change solids by squashing, bending, twisting	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		Compare and group materials together, according to whether they are solids, liquids or gases	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	
CHANGING STATES OF MATTER				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.	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	
REVERSIBLE & IRREVERSIBLE CHANGES					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.	
Light & Sound						
LIGHT SOURCES & PROPERTIES			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 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
SHADOWS			Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change.			Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
HOW SOUNDS ARE MADE				Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear		
PITCH				Find patterns between the pitch of a sound and features of the object that produced it		
VOLUME				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.		

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Forces & Electricity						
FORCE		Observe movement – rolling, falling, flying, walking, running, use words like faster & slower.			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.	
MAGNETS			Compare how things move on different surfaces 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 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.		Know that magnets have 2 poles, predict if magnets will attract / repel	
CIRCUITS				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		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 buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram.
CONDUCTORS & INSULATORS				Recognise some common conductors and insulators, and associate metals with being good conductors.		