



National Curriculum 2014: Progression Document for Science (Biology, Physics and Chemistry) across Key Stage Two.

Inclusive of;

- Learning Intentions
- Working Scientifically Skills
- Teachers' notes.

KS2 Science progression and coverage

		Year 3	Year 4	Year5	Year 6
Biology	Plants	LI: To identify and describe the functions of different parts of flowering plants. LI: To investigate what small plants need to grow well. To record findings, label diagrams, keys and tables and report on the findings using written explanations, results and conclusions. LI: To investigate the way in which water is transported within plants. LI: To explore the part that flowers play in the life cycle of flowering plants by exploring pollination and fertilisation LI: To order and describe the stages of the life cycle of a flowering plant			

		Year 3	Year 4	Year5	Year 6
Biology	Animals Inc Humans	LI: To identify that animals including humans need the right type and amount of nutrition. LI: To identify that animals including humans have skeletons LI: To identify and name bones LI: To identify that humans and some animals have skeletons for support, protection and movement. LI: To identify that humans and some other animals have muscles for movement	LI: To identify and name the basic parts of the digestive system in humans LI: To explain the functions of the different parts of the digestive system LI: To identify the different types of teeth in humans and their functions LI: To compare human and animal teeth, identifying similarities and differences WS1: Tooth Decay Enquiry LI: To distinguish between scientific and non-scientific questions. LI: To set up simple practical enquiries, comparative and fair tests. LI: To draw up simple observations and conclusions LI To construct and interpret a variety of food chains identifying Producers Predators and Prey Animals	LI: To describe the changes as humans develop to old age LI: To explore how babies grow and develop LI: To describe and explain the main changes during puberty. LI: To identify the changes that take place in old age LI: To compare gestation periods and life expectancies of animals	LI: To identify and name the main parts of the human circulatory system LI: To describe the functions of the heart, blood vessels and blood LI: To explain how water and nutrients are transported within the body. LI: To describe how diet and exercise impact on the human bodies. WS1: Exercise Investigation (to create an enquiry that compares and categorises different forms of exercise by taking accurate pulse measurements to gather data) LI: To recognise the impact of drugs and alcohol on the body LI: To explore the dangers of smoking
		Year 3	Year 4	Year5	Year 6

Biology	Living things and their habitat		LO: To recognise that living things can be grouped in a variety of ways LO: To classify vertebrates and use classification keys to help group, identify and name a variety of living things. -In the local environment -In the wider environment LO: To identify vertebrates by their similarities and differences LO: To identify invertebrates LO: To classify invertebrates and use classification keys to help group, identify and name a variety of living things. -In the local environment -In the wider environment Recognise that environments can change and that this can sometimes pose dangers to living things (in a local habitat)	LO: To describe the life process of reproduction in some plants and animals LO: To describe the life cycle of a mammal LO: To describe sexual reproduction in mammals LO: To explore Jane Goodall's work with chimpanzees. LO: To compare the differences in the life cycles of an amphibian and an insect LO: To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	LO: To classify animals based on their similarities and differences LO: To describe how living things are classified into broad groups according to common characteristics.(to include microorganisms, plants and animals by finding out about the Linnaean System of classification) LO: To identify the characteristics of different types of animals. (mammals, birds, insects, reptiles, amphibians, fish, arachnids, annelids, crustaceans, echinoderms and molluscs) LO: To describe and investigate helpful and harmful microorganisms WS1: Mould investigation LO: to identify the characteristics of different types of microorganisms. LO: To classify organisms found in the local habitat
		Year 3	Year 4	Year5	Year 6

Biology	Evolution and inheritance				LO: To explain the concept of inheritance (to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents) LO: To identify how animals and plants are adapted to suit their environment in different ways . WS1: Beak investigation LO: To identify the key ideas of the theory of evolution (to identify that adaption may lead to evolution) LO: To identify evidence of evolution from fossil records (to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago). LO: To explore how human beings have evolved LO: To identify how adaptation can result in both advantages and disadvantages To explain how human intervention affects evolution
		Year 3	Year 4	Year5	Year 6

KS2 Science progression and coverage

Physics	Light	LO: To recognise that they need light in order to see things and that dark is the absence of light. LO: To notice that light is reflected from surfaces. WS1: Which surfaces reflect light? (choose the most reflective material for a new book bag investigation) LO: To recognise that light is reflected from surfaces LO: To recognise that light from the sun can be dangerous and that there are ways to protect eyes LO: To recognise that shadows are formed when the light from a light source is blocked by a solid object. WS1: To investigate what happens when you change the distance between the object and the light source. Find patterns in the way that the sizes of shadows change			Light and Sight LO: To recognise that light appears to travel in straight lines LO: To explain that how we see things LO: To investigate the angles of incidence and reflection LO: To create a periscope and explain how it works LO: To investigate how refraction changes the direction in which light travels LO: To investigate how a prism changes a ray of light. LO: To investigate how light enables us to see colours LO: To explain why shadows have the same shape as the object that cast them
		Year 3	Year 4	Year5	Year 6

Reference progression and coverage				
Physics	Forces and Magnets			
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KS2 Science progression and coverage

Physics	Materials	LO: To compare and group together different kinds of rocks on the basis of their appearance LO: To group together different types of rocks based off their physical properties. LO: To describe how fossils are formed when things that have lived are trapped within rocks. LO: To explain Mary Anning's contribution to palaeontology. LO: To recognise that soils are made from rock and organic matter and explain how this is formed. WS1: To investigate the permeability of different soils. LO: To observe and record findings from enquiries, including presentation of results and conclusion			
	Year 3	Year 4	Year5	Year 6	

KS2 Science progression and coverage

Content Progression and Coverage					
Physics	States of Matter		LO: To compare and group materials together, according to whether they are solids, liquids or gases LO: To investigate gases and their uses WS1: To investigate how heating and cooling can change the materials state (chocolate with different temp water) LO: To observe that some materials change state, measure or research the temperature at which this happens in degrees Celsius (°C) WS1: To investigate how heating and cooling can change the materials state(explare how water changes state) LO: To observe that some materials change state, measure or research the temperature at which this happens in degrees Celsius (°C) LO: To identify the part played by evaporation and condensation in the water cycle WS1: To investigate how water evaporates (the effect of temperature on drying washing) LO: To identify and describe the water cycle		
	Year 3	Year 4	Year5	Year 6	

KS2 Science progression and coverage

Physics	Earth and Space			LO: To describe the Sun, Earth and Moon as approximately spherical bodies. LO: To name and describe features of the planets in the solar system LO: To order the planets in the solar system LO: To describe the movement of the Earth, and other planets, relative to the Sun in the solar system. LO: To explain day and night and the apparent movement of the sun across the sky. LO: To investigate night and day in different parts of the Earth and report and present findings. LO: To explain how the movement of the Moon.	
		Year 3	Year 4	Year 5	Year 6

KS2 Science progression and coverage

Physics	Sound		LO: To identify how sounds are made, associating some of them with something vibrating LO: To explore how sound travels. LO: To find patterns between the volume of a sound and the strength of the vibrations that produced it. LO: To recognise that vibrations from sounds travel through a medium to the ear by exploring how high and low sounds are created. LO: To find patterns between the pitch of a sound and features of the object that produced it. LO: To recognise that sounds get fainter as the distance from the sound source increases WS1: To investigate ways to absorb sound and recognise that vibrations from sound travels through the medium to the ear. (by making string telephones) WS1: To investigate the best material for absorbing sound.		
		Year 3	Year 4	Year 5	Year 6

Physics	Electricity		Electricity LO: To identify common appliances that run on electricity LO: To identify a complete and incomplete circuit. LO: To construct a simple series electrical circuit, identifying and naming its basic parts including: Cells Wires Bulbs Buzzers Switches LO: To recognise some common conductors and insulators and associate metals with being good conductors LO: To recognise a switch opens and closes a simple series circuit and associate this with whether or not a lamp lights in a simple series circuit LO: To identify whether or not a lamp will light in a simple series of circuits, based on whether or not the lamp is part of a complete loop with a battery		LO: To explain the importance of the major discoveries in electricity LO: To explain and observe the effects of differing volts in a circuit LO: To associate the brightness of a lamp or the volume of the buzzer with the number and voltage of cells used in the circuit. WS1: Electricity Investigation - investigate the relationship between the wire length and the brightness of the bulbs or the loudness of the buzzers (Compare and give reasons for variations in how components function including - Brightness of bulbs Loudness of buzzers On/off position of Switches)
		Year 3	Year 4	Year5	Year 6

KS2 Science progression and coverage

Chemistry	Properties and changes in materials			LO: To compare and group together everyday materials on the basis of their properties including -Hardness Solubility Transparency WS1: To investigate which electrical conductors make a bulb shine the brightest(use metals to test the circuit EG: copper, coin, iron, nail, steel spoon, jewellery) LO: To compare and group together everyday materials on the basis of their electrical conductivity. WS1: Investigate materials which will dissolve (Use different materials and different temperatures of water) LO: To use different processes to separate mixtures of materials, including filtering, sieving and evaporating. LO: To demonstrate that dissolving, mixing and changes of state are reversible changes LO: To describe how to recover a substance from a solution LO: To explain irreversible changes (explain that some changes result in the formation of new materials. •The formation of new materials is not usually reversible including changes associated with - Burning Action of acid on bicarbonate of soda)	
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Year 3	Rocks	Animals Including Humans		Forces and Magnets	Plants	Light
Year 4	Living Things and Their Habitats		States of Matter	Sound	Animals Including Humans	Electricity
Year 5	Earth and Space	Forces	Animals in Humans	Properties and changes of materials	Living Things and Their Habitats	
Year 6	Living things and their habitats	Electricity	Inheritance and evolution		Light	Animals Including humans