

2014 CURRICULUM - SCIENCE - LONG TERM PLANNING

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2		
YEAR 1	<p>-Y1- SEASONAL CHANGES</p> <p>a) observe changes across the 4 seasons (Autumn)</p>	<p>-Y1- USES OF EVERYDAY MATERIALS</p> <p>a) distinguish between object and their materials</p> <p>b) identify and name everyday materials: wood, plastic, glass, metal, water, and rock</p> <p>c) Describe simple physical properties</p> <p>d) compare and group materials</p>	<p>-Y1- SEASONAL CHANGES</p> <p>a) observe changes across the 4 seasons (Winter)</p>	<p>-Y1- ANIMALS INCLUDING HUMANS</p> <p>d) name basic body parts of the human body (in particular those associated with senses.</p>	<p>-Y1- SEASONAL CHANGES</p> <p>a) observe changes across the 4 seasons (Spring)</p> <p>b) observe and describe weather associated with the seasons and how day length varies.</p>	<p>-Y1- PLANTS</p> <p>a) identify & name common plants,</p> <p>b) identify and describe roots, stems/ trunk, leaves & flowers</p>	<p>-Y1- SEASONAL CHANGES</p> <p>a) observe changes across the 4 seasons (Summer)</p>	<p>-Y1- ANIMALS INCLUDING HUMANS</p> <p>a) identify and name common animals: fish, amphibians, reptiles, birds and mammals</p> <p>b) Classify carnivores, herbivores and omnivores</p> <p>c) describe and compare the structure of common animals</p>
YEAR 2	<p>-Y2- USES OF EVERYDAY MATERIALS</p> <p>a) identify & compare use of everyday materials (wood, metal, plastic, glass, brick, rock, paper and cardboard)</p> <p>b) compare how things move on different surfaces.</p> <p>c) find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>		<p>-Y2- LIVING THINGS AND THEIR HABITATS</p> <p>a) explore and compare differences between things that are living, dead, and never been alive</p> <p>b) identify that most living things live in habitats to which they are suited</p> <p>c) identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>d) describe how animals obtain their food from plants and other animals, using the idea of a simple food chain,</p>		<p>-Y2- ANIMALS INCLUDING HUMANS</p> <p>a) notice that animals,, have offspring which grow into adults</p> <p>b) find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>c) describe the importance of exercise, diet and hygiene for humans</p>		<p>-Y2- PLANTS</p> <p>a) observe and describe how seeds and bulbs grow into mature plants</p> <p>b) find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

1. asking simple questions and recognising that they can be answered in different ways
2. observing closely, using simple equipment
3. performing simple tests
4. identifying and classifying
5. using their observations and ideas to suggest answers to questions
6. gathering and recording data to help in answering questions.

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YEAR 3	<p>-Y3- FORCES AND MAGNETISM</p> <ul style="list-style-type: none"> a) compare how things move on different surfaces b) some forces need contact between 2 objects, but magnetic forces can act at a distance c) observe how magnets attract or repel each other and attract some materials and not others d) Group materials according to their magnetism e) describe magnets as having 2 poles & predict whether 2 magnets will attract or repel each other 	<p>-Y3- ROCKS</p> <ul style="list-style-type: none"> a) compare and group different kinds of rocks from simple physical properties b) describe in simple terms how fossils are formed c) recognise that soils are made from rocks and organic matter. 	<p>-Y3- ANIMALS INCLUDING HUMANS</p> <ul style="list-style-type: none"> a) identify the need for the right type and amount of nutrition, b) identify that humans and some other animals have skeletons and muscles for support, protection and movement. 	<p>-Y3- PLANTS</p> <ul style="list-style-type: none"> a) describe functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers b) Explore requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary c) investigate how water is transported in plants d) Explore role of flowers in life cycle plants (pollination, seed formation and seed dispersal) 	<p>-Y3- LIGHT</p> <ul style="list-style-type: none"> a) recognise that light is needed to see things & dark is the absence of light b) notice that light is reflected from surfaces c) recognise that sun light can be dangerous (sun safety) d) recognise that shadows are formed when light source is blocked by a solid object e) find patterns that determine shadow size 	
YEAR 4	<p>-Y4- ELECTRICITY</p> <ul style="list-style-type: none"> a) identify electric appliances b) construct a simple series electrical circuit, & name its basic parts (cells, wires, bulbs, switches and buzzers) c) identify if a lamp will light in a simple series circuit, d) recognise that a switch opens and closes a circuit e) recognise conductors and insulators, 	<p>-Y4- ANIMALS INCLUDING HUMANS</p> <ul style="list-style-type: none"> a) describe the simple functions of human digestive system b) identify the different types of human teeth in and their functions c) construct and interpret food chains, identifying producers, predators and preys. 	<p>-Y4- LIVING THINGS AND THEIR HABITATS</p> <ul style="list-style-type: none"> a) recognise that living things can be grouped in a variety of ways b) use classification keys to help group, identify and name a variety of living things c) recognise that environments can change and that this can pose dangers to living things. 	<p>-Y4- STATES OF MATTER</p> <ul style="list-style-type: none"> a) compare & group materials according to their state of matter : solids, liquids or gases b) observe changing state of some materials when heated or cooled (temperature measurement) c) Identify part played by evaporation & condensation in water cycle and associate rate of evaporation with temperature. 	<p>-Y4- SOUND</p> <ul style="list-style-type: none"> a) identify that vibrations create sounds and that we hear with our ears b) find patterns between pitch and features of object producing the sound c) find patterns between volume and strength of the vibrations d) recognise that sounds get fainter as the distance from the sound source increases 	

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

1. asking relevant questions and using different types of scientific enquiries to answer them
2. setting up simple practical enquiries, comparative and fair tests
3. making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
4. gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
5. recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
6. reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
7. using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
8. identifying differences, similarities or changes related to simple scientific ideas and processes
9. using straightforward scientific evidence to answer questions or to support their findings.

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YEAR 5	<p>-Y5- PROPERTIES & CHANGES OF MATERIALS</p> <ul style="list-style-type: none"> a) compare and group together everyday materials based on evidence from fair test (hardness, solubility, transparency, conductivity and magnetism) b) know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution c) use knowledge of solids, liquids and gases to decide how mixtures might be separated (filtering, sieving and evaporating) d) give reasons, based on and fair tests for particular uses of materials (metals, wood and plastic) e) demonstrate that dissolving, mixing and changes of state are reversible changes f) explain that some changes are irreversible and result in the formation of new materials,(burning and the action of acid on bicarbonate of soda) g) Role of Chemists currently and in history. 		<p>-Y5- ANIMALS INCLUDING HUMANS</p> <ul style="list-style-type: none"> a) describe the changes as humans develop from birth to old age. b) Puberty and growing up. c) Comparing gestation periods of different animals within life cycles. 	<p>-Y5- LIVING THINGS AND THEIR HABITATS</p> <ul style="list-style-type: none"> a) Describe the life cycles of a mammal, an amphibian, an insect and a bird b) describe the life process of reproduction in some plants and animals. c) Know works of naturalists and experts. 	<p>-Y5- FORCES</p> <ul style="list-style-type: none"> a) unsupported objects fall because of force of gravity between the Earth and the falling object b) effects of drag forces : air resistance, water resistance and friction c) Mechanical devices like levers, pulleys and gears allow a smaller force to have a greater effect 	<p>-Y5- EARTH AND SPACE</p> <ul style="list-style-type: none"> a) Describe movement of Earth and other planets relative to the Sun b) Describe movement of the Moon relative to Earth c) describe the Sun, Earth and Moon as approximately spherical bodies d) Earth's rotation explain day and night and apparent movement of sun in sky
YEAR 6	<p>-Y6- ELECTRICITY</p> <ul style="list-style-type: none"> a) Associate brightness of a lamp or the volume of a buzzer with number and voltage of cells used in the circuit b) compare and give reasons for variations in how components function, (brightness of bulbs, loudness of buzzers or on/off position of switches) c) use recognised symbols when representing a simple circuit in a diagram. d) Be able to design, build and record simple circuits. 	<p>-Y6- LIVING THINGS AND THEIR HABITATS</p> <ul style="list-style-type: none"> a) describe how living things are classified into broad groups based on observable characteristics and similarities /differences, b) give reasons for classifying plants and animals based on specific characteristics. c) Know of the works of Carl Linnaeus and other scientists in the fields of classification. 	<p>-Y6- ANIMALS INCLUDING HUMANS</p> <ul style="list-style-type: none"> a) identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood b) recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function c) describe the ways in which nutrients and water are transported in animals. d) Justify these findings with scientific research and findings. 	<p>-Y6- LIGHT</p> <ul style="list-style-type: none"> a) light appears to travel in straight lines b) objects are seen because they give out or reflect light into the eye c) light travels from light sources to our eyes or from light sources to objects and then to our eyes d) Relate light travelling in straight lines to shadow formation. e) Investigate the use of mirrors. f) Understand the effect of water on how light travels through it - rainbows and refraction. 	<p>-Y6- EVOLUTION AND INHERITANCE</p> <ul style="list-style-type: none"> a) living things have changed over time and fossils provide information from millions of years ago b) recognise that living things produce offspring of similar kind, but they usually vary and are not identical to their parents c) identify how animals and plants are suited to and adapt to their environment and that adaptation may lead to evolution. d) Role of Charles Darwin. 	

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

1. planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
2. taking measurements, using a range of scientific equipment, with increasing accuracy and precision
3. recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs
4. using test results to make predictions to set up further comparative and fair tests
5. reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations
6. identifying scientific evidence that has been used to support or refute ideas or arguments.