



Science MTP: Sequence of lessons			Living things and Habitats	Year 5	Focus Scientist: Jane Goodall
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to: 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.</p>			<p><u>Key vocabulary</u></p> <p>Animals – amphibians, reptiles, birds, mammals, insects, fish</p> <p>Animal development – egg, larva, pupa, nymph, adult, metamorphosis</p> <p>Parts of a flower – petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule)</p> <p>Processes – pollination, fertilisation, germination</p> <p>puberty reproduction growth sexual asexual</p>		
<p>Lesson 1</p> <p>To be able to explain the life cycle of an insect.</p>	<p>Lesson 2</p> <p>To be able to explain the life cycle of a bird.</p>	<p>Lesson 3</p> <p>To be able to explain the life cycle of an amphibian.</p>	<p>Lesson 4</p> <p>To be able to explain the life cycle of a mammal.</p>	<p>Lesson 5</p> <p>To be able to explain that some plants reproduce.</p> <p>To be able to use scientific diagrams and labels.</p>	<p>Lesson 6</p> <p>To be able to explain that some plants reproduce.</p>
<p>Ladybird Life Cycle</p> <p>What are the different stages of the life cycle of a ladybird?</p>	<p>Bird Life Cycle</p> <p>How do bird eggs change over time?</p>	<p>Amphibian Life Cycle</p> <p>How do smooth newts/common frogs develop over time?</p>	<p>Mammal Life Cycle</p> <p>How do different mammals develop, as they get older?</p>	<p>Sexual plants</p> <p>What are the functions of the different parts of the flower?</p>	<p>Asexual Plants</p> <p>How do asexual plants reproduce?</p>



Science MTP: Sequence of lessons		Properties and Changes and of Materials			Year 5	Focus Scientist: Marie Curie Chemist	
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to: 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 Understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 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.</p>				<p><u>Key vocabulary</u></p> <p>Thermal conductivity – thermal conductor, thermal insulator Electrical conductivity – electrical conductor, electrical insulator Dissolving – Solvent, solution, solute, soluble, insoluble, solid, liquid, particles, suspensions Separating materials – Sieve, filter, evaporate, condense</p>			
<p>Lesson 1</p> <p>To be able to compare and group together everyday materials based on evidence from comparative and fair tests, including their conductivity of heat.</p> <p>To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p>	<p>Lesson 2</p> <p>To be able to compare and group together everyday materials based on evidence from comparative and fair tests, including their conductivity of heat.</p> <p>To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations.</p>	<p>Lesson 3</p> <p>To be able to compare and group together everyday materials based on evidence from comparative and fair tests, including their conductivity of electricity.</p> <p>To be able to plan a scientific enquiry that will answer a question.</p>	<p>Lesson 4</p> <p>To be able to understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>To be able to recognise control variables when planning a fair test.</p> <p>To be able to evaluate an enquiry in terms of the amount of trust one can have in it.</p>	<p>Lesson 5</p> <p>To be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p>	<p>Lesson 6</p> <p>To be able to demonstrate that dissolving, mixing and changes of state are reversible changes.</p>	<p>Lesson 7</p> <p>To be able to explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.</p>	<p>Lesson 8</p> <p>To be able to explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.</p> <p>To be able to recognise and control variables.</p>



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Science MTP: Sequence of lessons				Earth and Space	Year 5	Focus Scientist: Nicolas Copernicus
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe 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</p> <p>Lesson 8 – Trip to Space Centre in Leicester.</p>				<p><u>Key vocabulary</u></p> <p>Day and night - Earth, axis, rotate</p> <p>Solar system – Star = Sun, Planets = Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto was classified as Dwarf planet in 2006)</p> <p>Phases of the Moon - full moon, gibbous moon, half moon, crescent moon, new moon, waxing ,waning</p> <p>Moon's orbit: 29.5 days, lunar month</p> <p>Orbit, planets, revolve, sphere</p> <p>Orbiting rotating gravity orbit Leap Year</p>		
<p>Lesson 1</p> <p>To be able to describe the Sun, Earth and Moon as spherical bodies.</p> <p>WS: To be able to analyse scientific evidence.</p>	<p>Lesson 2</p> <p>To be able to name and order the planets in the solar system.</p> <p>WS: To be able to gather information from secondary sources.</p>	<p>Lesson 3</p> <p>To be able to understand the size of the planets in the solar system.</p>	<p>Lesson 4</p> <p>To describe and explain the movement of the Earth and other planets in relation to the Sun.</p> <p>WS: To present findings from an enquiry</p> <p>WS: Recording data and results of increasing complexity- using tables.</p>	<p>Lesson 5</p> <p>To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p> <p>WS: Recording data and results of increasing complexity using scientific diagrams.</p>	<p>Lesson 6</p> <p>To describe and explain the movement of the Moon relative to the Earth.</p> <p>WS: Recording data and results of increasing complexity using scientific diagrams.</p>	<p>Lesson 7</p> <p>To describe and explain the movement of the Moon relative to the Earth.</p> <p>WS: To observe over time.</p>
<p>Spherical Bodies</p> <p>How can we prove the shape of the Earth, Sun and Moon?</p>	<p>Solar System – Naming the Planets</p> <p>What is in our solar system?</p>	<p>Distance and Size of Planets</p> <p>What size are each of the planets?</p>	<p>Movement of planets</p> <p>What is a year? Is a year the same everywhere?</p>	<p>Night and Day</p> <p>How do we have day and night on planet Earth?</p>	<p>Movement of the Moon</p> <p>Does the Moon always look the same size?</p>	<p>Phases of the Moon</p> <p>*Observation Over Time*</p> <p>How does the shape of the Moon appear to change over time?</p>



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Science MTP: Sequence of lessons			Forces	Year 5	Focus Scientist: Isaac Newton	
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to: 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.</p>			<p><u>Key vocabulary</u></p> <p>Types of forces: gravity, friction, air resistance, upthrust, weight Measuring forces: Newton meter, Newtons (N) Particles Surface area Push, pull Balance Mass – grams and kilograms Mechanical devices – gears, levers, pulleys, springs</p>			
<p>Lesson 1</p> <p>To identify forces acting on objects. To identify forces as pushes and pulls.</p>	<p>Lesson 2</p> <p>To be able to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>WS: Recording data and results of increasing complexity-using tables.</p>	<p>Lesson 3</p> <p>To be able to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>To learn about a significant scientist.</p> <p>WS: To use secondary sources to gather information.</p>	<p>Lesson 4</p> <p>To be able to identify the effects of air resistance that act between moving surfaces.</p> <p>WS: To be able to use test results to make predictions to set up further fair tests.</p>	<p>Lesson 5</p> <p>To be able to identify the effects of friction between moving surfaces.</p> <p>WS: To be able to plan a fair test; identifying the control variables.</p>	<p>Lesson 6</p> <p>To be able to identify the effects of water resistance that act between moving surfaces.</p> <p>WS: To be able to explain the degree of trust in results.</p>	<p>Lesson 7</p> <p>To explore mechanisms.</p> <p>WS: To sort and classify mechanisms.</p>
<p>Push & Pulls</p> <p>What forces can you observe in action?</p>	<p>Gravity</p> <p>How does the surface area of a piece of paper affect how quickly it falls?</p>	<p>Isaac Newton</p> <p>Who was Issac Newton and why was he so significant?</p>	<p>Air Resistance</p> <p>What affects how well a parachute falls?</p>	<p>Friction</p> <p>How can surface materials slow a car down?</p>	<p>Water Resistance</p> <p>How does the mass of a boat affect the depth it travels below the water surface?</p>	<p>Mechanisms</p> <p>What different mechanisms?</p>



Science MTP: Sequence of lessons			Animals including Humans (Human Reproduction and Ageing)	Year 5	Focus Scientist: Professor Robert Winston
<p><u>Reference to the Programme of Study 2014</u></p> <p>Pupils should be taught to: Describe the changes as humans develop from birth to old age.</p>			<p><u>Key vocabulary</u></p> <p>Gestation Fetus Fertilisation Species Baby Toddler Adolescent Adult Elderly person Puberty Hormones Pituitary gland Testosterone Estrogen</p>		
<p>Lesson 1</p> <p>To be able to describe the changes as humans develop from birth to old age.</p> <p>To be able to present data in a table.</p>	<p>Lesson 2</p> <p>To be able to describe the changes as humans develop from birth to old age.</p> <p>WS: To be able to communicate data using a scatter graph.</p> <p>WS: To be able to use evidence to refute or support an idea.</p>	<p>Lesson 3</p> <p>To describe the changes as humans develop from fertilisation to birth.</p> <p>WS: To be able to present data on a timeline.</p>	<p>Lesson 4</p> <p>To explain how babies grow and develop during early childhood.</p> <p>WS: To be able to record data using line graphs.</p> <p>WS: To be able to present conclusions.</p>	<p>Lesson 5</p> <p>To describe and explain the main changes that occur during puberty.</p>	<p>Lesson 6</p> <p>To identify the changes that take place in late adulthood.</p>
<p>Gestation Period Animals</p> <p>How long are the gestation periods of different animals?</p>	<p>Gestation Period Scatter Graphs</p> <p>Is there a relationship between the mass of adult animal and the length of the gestation period?</p>	<p>Prenatal Development</p> <p>How does the size of a baby change?</p>	<p>Height of Boys and Girls</p> <p>How does the height of a baby change over time?</p>	<p>Puberty</p> <p>What happens to the human body during puberty?</p>	<p>Elderly People</p> <p>What happens to adults as they become older?</p>