

| | Earth and Space | Forces | Properties & Changes of Materials | Living Things and their Habitats | Animals (including humans) |
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| RHS | <p>Will we ever send another human to the moon?</p> <p>Topic link- Egyptians</p> <ul style="list-style-type: none"> • Earth relative to the Sun • Moon relative to the Earth • Relationship between Sun, Earth and Moon • Earth's rotation • Day and night | <p>Can you feel the force?</p> <p>Topic Link- Gunpowder, Treason and Plot</p> <ul style="list-style-type: none"> • Gravity • Air Resistance • Water Resistance • Friction • Gears, Pulleys, Leavers and Springs | <p>Could you be the next CSI investigator?</p> <p>Topic link- Brazil in Focus</p> <ul style="list-style-type: none"> • Dissolving • Evaporating • Filtering • Reversible and Irreversible changes | <p>Do all animals and plants start life as an egg?</p> <p>Topic Link- Brazil and the Rainforest</p> <ul style="list-style-type: none"> • Life cycles of plants and animals • Birth, growth, development and reproduction | <p>How different will you be when you are as old as your grandparents?</p> <p>Topic Link- Anglo Saxons</p> <ul style="list-style-type: none"> • Changes as humans develop from birth to old age |
| | <p>Yr 5</p> <p>Key outcomes for this unit, children to be able to:</p> <ul style="list-style-type: none"> • describe the movement of the Earth, and other planets, relative to the Sun in the solar system Physics 5.2.1 • describe the movement of the Moon relative to the Earth Physics 5.2.2 • describe the Sun, Earth and Moon as approximately spherical bodies Physics 5.2.3 • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. Physics 5.2.4 <p>WOW: Visit from a mobile Planetarium or set up a telescope.</p> <p>Key learning Points:</p> <ul style="list-style-type: none"> • Could we describe the Earth and the Sun as space cousins? • If the Earth and Sun are cousins, is the Moon a young nephew? • Can you explain why we have day and night? • How can we appreciate the distances between and the sizes of the Sun, Earth and Moon? • What can we learn about the solar system and the other planets in it? • Who was Neil Armstrong and what would you ask him if you met him? • How could you create a moon surface and create a moon buggy? • Reflection: Could you create a simulated moon landing and film it? | <p>Key outcomes for this unit, children to be able to:</p> <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 Physics 5.1.1 • identify the effects of air resistance, water resistance and friction, that act between moving surfaces Physics 5.1.2 • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Physics 5.1.3 <p>WOW: Find a hill to run up and down and consider the question, 'Why does it take longer to run up rather than down a hill?'</p> <p>Key learning Points:</p> <ul style="list-style-type: none"> • What is friction and how does it affect moving objects? • Why will a car always move faster than a boat? • What is gravity and why is Isaac Newton linked to it? • Can you design and make a parachute to help you understand more about air resistance? • How do builders get heavy items onto the top of skyscrapers? • Can you design, make and evaluate a structure that will propel a marble as far as possible? • What helps you to climb hills on your bicycle? • Reflection: Put together a presentation to show the | <p>Key outcomes for this unit, children to be able to:</p> <ul style="list-style-type: none"> • compare and group together everyday materials on the basis of their properties, Chemistry 5.2.1 • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Chemistry 5.2.2 • use knowledge of solids, liquids and gases to decide how mixtures might be separated Chemistry 5.2.3 • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood Chemistry 5.3.1 • demonstrate that dissolving, mixing and changes of state are reversible changes Chemistry 5.2.4 • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible Chemistry 5.2.5 <p>WOW: Burn a number of different materials, examine the remains and see whether the original item can be identified.</p> <p>Key learning Points:</p> <ul style="list-style-type: none"> • Can you think of five materials that can be changed and reversed and five that cannot? • How have scientists made use of changes to create materials that | <p>Key outcomes for this unit, children to be able to:</p> <ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Biology 5.4b.1 • describe the life process of reproduction in some plants and animals. Biology 5.51 <p>WOW: Show clips of film of animals hunting each other and talk about life cycles.</p> <p>Key learning Points:</p> <ul style="list-style-type: none"> • Can you work out which animals depend on each other for survival? • What would you ask David Attenborough or Jane Goodall if you met them? • How can you create a presentation to show the life cycle of a butterfly or a frog? • Do all animals start life as an egg? • How do humans change as they grow? • Can you recreate the life cycle of a butterfly in using music and dance? • How can you create art from the environment? • Reflection: Children to create a poster of a chosen animal or plant showing its life cycle. <p>Key skills:</p> <ul style="list-style-type: none"> • Describe and compare the life cycles of a range of animals, including humans, amphibians, insects and birds. | <p>Key outcomes for this unit, children to be able to:</p> <ul style="list-style-type: none"> • describe the changes as humans develop to old age. Biology 5.4b.2 <p>WOW: Use the photographic app that shows what they will look like in 20 years time and talk about what their feelings are, etc.</p> <p>Key learning Points:</p> <ul style="list-style-type: none"> • Choose a baby, themselves, a teenager, a young adult, their parents and their grandparents and create a chart to find out about what they can and cannot do? • What can you now do that you couldn't do when you were a baby? • Do we all have the same X Factor? • What are the important things we should do to keep fit and healthy? • What are the important things we should do to keep fit and healthy? • What is the life expectancy of different animals? • Reflection: How would you wish to be remembered as you make your journey through life? <p>Key skills:</p> <ul style="list-style-type: none"> • Create a timeline to indicate stages of growth in humans. • Explain what puberty is. • Understand that as we develop into adults we are able to reproduce. |

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| | <p>Key Skills</p> <ul style="list-style-type: none"> Identify and explain the movement of the Earth relative to the Sun. Explain how seasons and the associated weather are created. Identify and explain the movement of the Moon relative to the Earth. Explain the size, shape and position of the Earth, Sun and Moon. Explain how night and day are created and use diagrams to show this. Explain how planets are linked to stars. <p>Challenge:</p> <ul style="list-style-type: none"> Create shadow clocks. | <p>advantages and disadvantages of friction in your life.</p> <p>Key Skills</p> <ul style="list-style-type: none"> Explore different ways to test an idea, choose the best way, and give reasons. Vary one factor whilst keeping the others the same in an experiment. Explain why they do this. Plan and carry out an investigation by controlling variables fairly and accurately. Make a prediction with reasons. Use information to help make a prediction. Use test results to make further predictions and set up further comparative tests. Explain (in simple terms) a scientific idea and what evidence supports it. Present a report of their findings through writing, display and presentation. Explain what gravity is and its impact on our lives. Explain why a wheeled object that is initially pushed will slow down and stop. Explain the impact of friction on a moving object. Explain the effect of drag force on moving objects. Explain how force and motion can be transferred through gears, pulleys, levers and springs. <p>Challenge:</p> <ul style="list-style-type: none"> Design very effective parachutes. | <p>make our lives easier, e.g. cling film?</p> <ul style="list-style-type: none"> Which materials dissolve and evaporate and why can this sometimes be an important quality in those materials? How are reversible and irreversible changes important to forensic scientists? How could you solve a crime by using forensic evidence? What is bicarbonate of soda and what impact does it have on different materials? Using finger prints as well as hand and foot prints, can you create an interesting piece of art work that has interesting design features? Reflection: Create your own version of 'Brainiac' and present it to Year 3 children. <p>Key Skills:</p> <ul style="list-style-type: none"> Explore different ways to test an idea and choose the best way, and give reasons. Vary one factor whilst keeping the others the same in an experiment. Can they explain why they do this? Plan and carry out an investigation by controlling variables fairly and accurately. Make a prediction with reasons. Use information to help make a prediction. Use test results to make further predictions and set up further comparative tests. Explain (in simple terms) a scientific idea and what evidence supports it. Present a report of their findings through writing, display and presentation. Explain how changes can result in the formation of new materials. Explain what an irreversible change is and give examples. | <ul style="list-style-type: none"> Describe the life cycles of common plants. Talk with knowledge about birth, reproduction and death of familiar animals or plants. Explore the work of well know naturalists.(David Attenborough and Jane Goodall) Report findings from investigations through written explanations and conclusions. Use a graph to answer scientific questions. <p>Challenge: Observe their local environment and draw conclusions about life-cycles (for example, the vegetable garden or flower border)</p> | <ul style="list-style-type: none"> Explain what puberty is. (non statutory) Appreciate that all animals will eventually die. Explain why different animals have a different life expectancy. Make a prediction with reasons, Use test results to make further predictions and set up further comparative tests. Present a report of their findings through writing, display and presentation. Take measurements using a range of scientific equipment with increasing accuracy and precision. Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models. <p>Challenge:</p> <ul style="list-style-type: none"> Create a timeline to indicate stages of growth in certain animals, such as frogs and butterflies. |

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| | | | <ul style="list-style-type: none"> Explore the work of famous chemists. (Lavoisier, Priestley, Spencer Silver or Ruth Benerito) Distinguish metals from other solid materials by describing metallic properties. Explain why some metals rust. Explain what happens when vinegar or bicarbonate of soda is added to materials. <p>Challenge:</p> <ul style="list-style-type: none"> Suggest ways to separate mixtures based on what they know about certain materials. | | |
| | Trips and Experiences | Trips and Experiences | Trips and Experiences | Trips and Experiences | Trips and Experiences |
| | Visit to the space centre, or visiting planetarium to come to school. | Possible visit from a member of the parachute regiment. | A day of experiments- Empiribox As this topic lends itself well to experiments from empiribox. Children will end this topic by forming groups and visiting other classes to show and explain their experiments and results. | Botanical Gardens | Possible SRE workshops |
| | Other ideas for trips and experiences | Other ideas for trips and experiences | Other ideas for trips and experiences | Other ideas for trips and experiences | Other ideas for trips and experiences |
| | Children to work in groups to recreate the moon landing. Video ready to be shown during National Science Week. | | | Caterpillar larvae bought into school. Children to observe life cycle, crickets, eggs | |