

UKS2 Science Medium Term Planning- Cycle B

KS1	Aspect	Main Enquiry Question	Learning Challenges	Knowledge	Working Scientifically
Autumn 1	Physics <i>Earth and space</i>	<i>Is there anybody out there?</i>	<p>LC1- Could we describe the Earth and the Sun as space cousins and if the Earth and Sun are cousins, is the Moon a young nephew?</p> <p>LC2- Can you explain why we have day and night?</p> <p>LC3- What do we know about the other planets in our solar system?</p> <p>LC4- Who was Neil Armstrong and what would you ask him if you met him?</p> <p>LC5- Reflection: Could you create a simulated moon landing and film it?</p>	<ul style="list-style-type: none"> - Know about and explain the movement of the Earth and other planets relative to the sun. - Know about and explain the movement of the moon relative to the Earth. - Know and demonstrate how night and day are created. - Describe the Sun, Earth and Moon (using the term spherical). 	<ul style="list-style-type: none"> - Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Autumn 2	Biology Evolution and inheritance	<i>Have we always looked like this?</i>	<p>LC1- What do we mean by evolution and inheritance?</p> <p>LC2- Who was Charles Darwin and why is he still a controversial figure?</p> <p>LC3- Could we possibly have evolved from apes, monkeys or other primates?</p> <p>LC4- Why do you not usually look exactly like your mum or dad?</p> <p>LC5- Can you find out how animals who: live in the cold; around the equator; under the ground: and, in trees: are specifically adapted to live and survive there?</p> <p>LC6- Reflection: Carry out individual research about the way humans have adapted over years that requires you to start with a range of questions.</p>	<ul style="list-style-type: none"> - Know how the earth and living things have changed over time. - Know how fossils can be used to find out about the past. - Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents. - Know how animals and plants are adapted to suit their environment. - Link adaptation over time to evolution. - Know about evolution and can explain what it is. 	<ul style="list-style-type: none"> - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. - Using test results to make predictions to set up further comparative and fair tests. - Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Spring	Biology Animals including humans	<i>Why is your heart the most important pump you own?</i>	<p>LC1- Why should having a defective heart be life-threatening to Cameron?</p> <p>LC2- What is the relationship between our pulse and exercise?</p> <p>LC3- Could Doctor Bryce be the modern William Harvey?</p> <p>LC4- What happens to the oxygen we breath and could we describe our arteries and capillaries as the body's motorway system?</p> <p>LC5- What is the difference between the drugs Cameron takes and the drugs we know that could potentially cause our bodies serious damage?</p>	<ul style="list-style-type: none"> - Identify and name the main parts of the human circulatory system. - Know the function of the heart, blood vessels and blood. - Know the impact of diet, exercise, drugs and lifestyle on health. - Know the ways in which nutrients and water are transpired in animals, including humans. 	<ul style="list-style-type: none"> - Identifying scientific evidence that has been used to support or refute ideas or arguments.

			<p>LC6- Reflection: Working in teams, in small groups, can you put together a presentation which shows the relationship between the heart, blood and breathing.</p>		
<p>Summer</p>	<p>Physics Electricity</p>	<p><i>Could you be the next Nintendo apprentice?</i></p>	<p>LC1-How can you create an electrical circuit that has a switch or a buzzer? LC2- How do scientists draw electrical circuits? LC3- Why does this circuit not work and what can be done to fix it? LC4- How does the number of cells effect the brightness of a bulb? LC5- Can I plan a scientific enquiry to answer questions, including recognising and controlling variables where necessary? LC6- How can an electrical circuit be used to make a steady hand tester?</p>	<ul style="list-style-type: none"> - Compare and give reasons for why components work and do not work in a circuit. - Draw circuit diagrams using the correct symbols. - Know how the number of voltage cells in a circuit links to the brightness of a lamp or the volume of a buzzer. 	

GDS Opportunities

- Can they choose the best way to answer a question?
- Can they use information from different sources to answer a question and plan an investigation?
- Can they make a prediction which links with other scientific knowledge?
- Can they identify the key factors when planning a fair test?
- Can they explain how a scientist has used their scientific understanding plus good ideas to have a breakthrough?
- Can they plan in advance which equipment they will need and use it well?
- Can they make precise measurements?
 - Can they collect information in different ways?
- Can they record their measurements and observations systematically?
- Can they explain qualitative and quantitative data?
- Can they draw conclusions from their work?
- Can they link their conclusions to other scientific knowledge?
- Can they explain how they could improve their way of working?
- Can they talk about the work of Charles Darwin, Mary Anning and Alfred Wallace?
- Can they explain how some living things adapt to survive in extreme conditions?
- Can they analyse the advantages and disadvantages of specific adaptations, such as being on two rather than four feet?
- Can they begin to understand what is meant by DNA?
- Can they explore the work of medical pioneers, for example, William Harvey and Galen and recognise how much we have learnt about our bodies?
 - Can they compare the organ systems of humans to other animals?
 - Can they make a diagram of the human body and explain how different parts work and depend on one another?
 - Can they name the major organs in the human body?
 - Can they locate the major human organs?
 - Can they make a diagram that outlines the main parts of a body?
- Can they make their own traffic light system or something similar?
- Can they explain the danger of short circuits?
- Can they explain what a fuse is?
- Can they explain how to make changes in a circuit?
- Can they explain the impact of changes in a circuit?
- Can they explain the effect of changing the voltage of a battery?
- Can they compare the time of day at different places on the earth?
- Can they create shadow clocks?
- Can they begin to understand how older civilizations used the sun to create astronomical clocks, e.g. Stonehenge?
- Can they explore the work of some scientists? (Ptolemy, Alhazen, Copernicus)