

## Science Year Planner Year 6

<b>Term</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 2</b>
<b>Topic or Stand-Alone?</b>	Topic: Evolution and inheritance	Topic: Lighthouse	Topic : Lighthouses	Topic: Keeping Healthy
<b>Enquiry Questions:</b>	<p><i>How can we organise animals into different groups? Why would we do this?</i></p> <p><i>How do we know that living things used to inhabit the Earth? How and why have they changed over time?</i></p> <p><i>What is the importance of fossils and how are they formed?</i></p> <p><i>How do different sorting and classifying diagrams work?</i></p>	<p><i>Can the outcome of a circuit be change? How can you prove this?</i></p>	<p><i>How does light travel? ( Practical investigation with questions as prompts)</i></p>	<p><i>What is the circulatory system? How does it work? What might affect how it functions?</i></p> <p><i>What affects how our bodies function and what are the impact of these?</i></p>
<b>Science Knowledge NC Focus</b>	Classification Evolution and inheritance	Electricity Unit	Light	Animals including humans
<b>Working Scientifically NC Focus:</b>	Investigate / understand : How can we group, classify and identify the different plants and animals?	Investigate / understand: How does a functioning circuit work and how can we record this?	What can we discover about how light and how it travels? ( Exploratory activity)	Investigate / understand What is the impact of fresh fruit and vegetables on scurvy?

	<p>*record data and results using classification keys,</p> <p><b>Investigate / understand:</b> <b>What are fossils and how are they formed?( Create a diagram to explain)</b></p> <ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels.</li> </ul> <p><b>Investigate / understand:</b> <b>( Investigation)</b> <b>Which food is this beak shape the best adapted to eating?</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>recording data and results of increasing complexity using tables</li> <li>reporting and presenting findings from enquiries, including conclusions, and explanations</li> <li>using test results to make predictions to set up further comparative and fair tests (discussion to feed into next possible test eg best food for other beak shapes )</li> <li>identifying scientific evidence that has been</li> </ul>	<p><b>( Create diagram pictures / symbols)</b> recording data and results of increasing complexity using scientific diagrams and labels,</p> <p><b>How can we change the outcome of a circuit? (Supported brightness of bulb)How could we use what we found out to improve our investigation next time?</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>recording data and results of using line graphs.</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral-forms such as displays and other presentations ( Discussion of accuracy just using observations, how could we have made this more scientific / reliable)</li> </ul>	<ul style="list-style-type: none"> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations in oral—forms such as presentations.( Practical demo)</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul> <p><b>Investigate/understand</b> <b>How do we see?</b></p> <p>Practical task and diagram.</p> <ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, ( Explain how we see)</li> </ul> <p><b>Investigate/understand</b> <b>How is light reflected?</b> <b>Practical exploratory task and follow up work</b></p> <ul style="list-style-type: none"> <li>reporting and presenting findings from enquiries, including conclusions,</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, ( Explain how light is reflected)</li> </ul>	<ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul> <p><b>Investigate / understand</b> <b>How does the circulatory system work? Explain using diagram.</b></p> <ul style="list-style-type: none"> <li>Recording data and results of increasing complexity using scientific diagrams and labels,</li> </ul> <p><b>Investigate / understand</b> <b>What is the impact of exercise on your circulatory system? Pulse rate after certain lengths of time exercising.</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> </ul> <p>*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</p>
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	<p>used to support or refute ideas or arguments</p> <p><b>( Discuss where link investigation findings to Darwin's findings and other evolution theorists)</b></p>	<ul style="list-style-type: none"> <li>using test results to make predictions to set up further comparative and fair tests (discussion to feed into next test)</li> </ul> <p><b>Investigate/ understand</b>  <b>How can we change the outcome of a circuit? (Unsupported volume of decibels)</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>recording data and results of increasing complexity scatter graphs,</li> <li>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</li> </ul> <p>( Discussion of accuracy using 3 recordings, different recoding equipment compared to just observations)</p>	<p><b>Investigate/understand</b>  <b>How do we <u>prove</u> that the darkness of the shadows are linked to the density of the material?</b>  <b>Or</b>  <b>How can we prove that some materials reflect light better than others?</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>recording data and results of increasing complexity</li> <li>taking measurements (<u>light; LUX</u>), using a range of scientific equipment ( light APPs), with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>reporting and presenting findings from enquiries, including conclusions, and explanations of and degree of trust in results, in oral-and written forms</li> </ul> <p>*identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<ul style="list-style-type: none"> <li>recording data and results of increasing complexity using tables, scatter graphs,</li> <li>taking measurements (<u>pulse BPM, .</u>), using a range of scientific equipment (stopwatch, pulse meter), with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>using test results to make predictions to set up further comparative and fair tests</li> </ul> <p>(Types of exercise, after exercise, wearing weights?)</p>
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		<ul style="list-style-type: none"> <li>taking measurements (volume; DBs), using a range of scientific equipment (data logger and different APPs), with increasing accuracy and precision, taking repeat readings when appropriate</li> </ul> <p>*Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p><b>Investigate/ understand</b>  <b>How does the way light travel, impact on the shadows that are cast?</b></p>	
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<p><b>Sequence of lessons</b></p>	<p><b>Lesson 1</b>  <b>EQ1: How can we organise animals into different groups?</b>  <b>Why would we do this?</b>  1. What is classification?  2. How do I start to classify?</p> <p><b>Lesson 2/3</b>  <b>EQ2: How do different sorting and classification diagrams work?</b>  3. Using a given key to classify  4. Creating a key to classify</p> <p><b>Lesson 4</b>  <b>EQ3: How do we know living things used to inhabit the Earth?</b>  5. Handling session</p> <p><b>Lesson 5</b>  <b>EQ4: What is the importance of fossils and how are they formed?</b></p>	<p><b>Lesson 1</b>  <b>EQ1: What apparatus is needed To construct a simple circuit and how do I record this?</b>  1. Construct a working circuit.  2. Label the components</p> <p><b>Lesson 2</b>  3. Investigating symbols and using them to record a circuit.</p> <p><b>Lesson 3 / 4</b>  <b>EQ2: How can the outcome of a circuit be affected? LUX</b>  4. Unsupported investigation. Discussion scientific and LUX</p> <p><b>Lesson 5/ 6</b>  <b>EQ3: How could we make our investigation more scientific</b></p>	<p><b>Lesson 1</b>  <b>EQ1: What do I already know about how light travels?</b>  1. Investigate and explore how light travels (from light source)</p> <p><b>Lesson 2</b>  <b>EQ2: How does light travel? How does that affect how we see?</b>  2. Investigate how light travels.  3. Discussion and question.  4. Practical task  5. Use diagrams to explain that we see things because light travels from light sources in straight lines and then to our eyes, ( <b>Vocab to support</b>)</p> <p><b>Lesson 3</b></p>	<p><b>Lesson 1</b>  <b>EQ1: What affects how our bodies function?</b>  1. Consider different pictures to determine categories.</p> <p><b>EQ2: In what ways can the different categories affect how our bodies function?</b>  2. Discuss in groups impact of different categories on body.</p> <p><b>Lesson 2</b>  <b>EQ3: What is the impact of fresh fruit and vegetables on scurvy? How could it be proved?</b>  3. Video, close activity</p>
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	<p>6.What are fossils and how are they formed?  7..Create diagram  8.Discuss importance  9,What information can they provide?  EQ 5 How and why have living things changed over time?  <b>Lesson 6</b>  10.Inheritance  11.Adaptation  <b>Lesson 7</b>  12. (Investigation) Which food is the beak shape best adapted to eating?  <b>Lesson 8</b>  13. Evolution  14. Links to Darwin’s findings and other evolution theorists.  15. Evidence for evolution</p>	<p>when investigating the outcome?  5. Planning  10. Recording  11. Reporting  <b>Lesson 8</b>  EQ5 : What are the possible variations in how components function and what are the reasons for these?  12. Investigate circuits to identify changes / lack of outcome. / Assess  n</p>	<p>EQ3: How does reflected light help us to see reflections?  6.Theory and close  7.Practical – angles and reflection.  8. Diagram and explanation.  <b>Lesson 4</b>  EQ4: How can we prove that some materials reflect light better than others?  9. Practical elicitation task reflection  10 Plan investigation  11. Carry out investigation and use of APP to record .x3  12. Reporting and conclusions  <b>Lesson 5</b>  EQ5: How does the way that light travels, impact on the shadows that are cast?  13.Elliiication and discussion activity.  14. Shadows task  15 Plan investigation  16 Carry out investigation  17. Conclusionn  <b>Lesson 6</b>  EQ6: What Have we learned about how we see?  18. KO and review</p>	<p>4. Investigation  <b>Lesson 3 / 4</b>  EQ4; What is the human circulatory system and how does it work?  5. Gather information  6. Lift the flap  7. Labelled diagram(AT1)  <b>Lesson 5</b>  EQ5: What are the functions of the heart, blood vessels and blood?  8. Information  9. Present information  <b>Lesson 6/7/8</b>  EQ6: What is the impact of exercise on the human circulatory system?  10. Plan  11. Carry out  12. Present data as graph  13. Conclusions  14. Knowledge organiser finish.</p>
<b>Vocabulary:</b>	offspring inheritance	circuit symbol	light light source	circulatory system heart

	<p>variations characteristics adaptation habitat environment evolution natural selection fossil adaptive traits inherited traits</p> <p>scientific diagrams classification keys variables scientific enquiry bar graph line graph conclusions predictions fair test comparative test scientific evidence support and refute tweezers</p>	<p>bulb buzzer volume cell / battery current amps voltage decibel LUX Resistance Electrons</p> <p>diagrams labels scatter graph scientific enquiry variables data results bar graph line graph reporting and presenting findings conclusions causal relationships degree of trust accuracy observation comparative test fair test data logger Light APP Volume APP</p>	<p>reflection incident ray reflected ray the law of reflection shadow transparent translucent opaque straight</p> <p>report present enquiry conclusions causal relationship presentation identify scientific evidence measure support and refute arguments diagram investigate recording data results diagrams labels explain LUX data logger Light APP repeat reading precision reporting presenting</p>	<p>blood vessels oxygenated blood de-oxygenated blood pumps oxygen drug alcohol nutrients lifestyle diet plasma platelets pulse pulse rate BPM</p> <p>report present conclusions causal relationship explanations degree of trust results presentation variables data scientific diagrams findings report explain presentations measurements pulse meter equipment</p>
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		Equipment repeated	conclusions explanations degree of trust	stopwatch BPM Accuracy precision
<b>Additional non-fiction reading</b>				