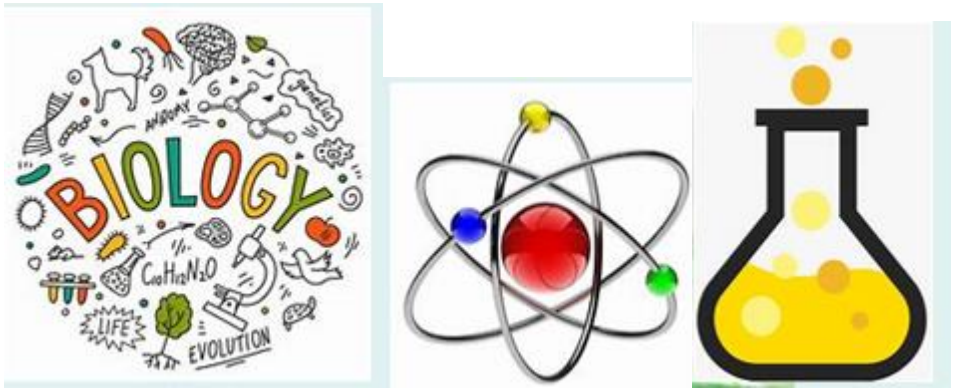
Science Year Planner Year 6



Term	Autumn 2	Spring 1	Spring 2	Summer 2
Topic or Stand-Alone?	Topic: Evolution and inheritance	Topic: Lighthouse	Topic : Lighthouses	Topic: Keeping Healthy
Enquiry Questions:	***How can we organise animals into different groups? Why would we do this?*** ***How do we know that living things used to inhabit the Earth?*** ***How and why have they changed over time?***	***Can the outcome of a circuit be change? How can you prove this?***	***How does light travel?***	***What is the circulatory system? How does it work? What might affect how it functions?*** ***What affects how our bodies function and what are the impact of these?***

	What is the importance of fossils and how are they formed? ***How do different sorting and classifying diagrams work?***			
Science Knowledge NC Focus	Classification Evolution and inheritance	Electricity Unit	Light	Animals including humans
Working Scientifically NC Focus:	**Investigate / understand :** **How can we group, classify and identify the different plants and animals?**  *record data and results using, classification keys, **Investigate / understand:** **What are fossils and how are they formed?(Create a diagram to explain)**  • recording data and results of increasing complexity using scientific diagrams and labels.	**Investigate / understand:** **How does a functioning circuit work and how can we record this?** **(Create diagram pictures / symbols)** recording data and results of increasing complexity using scientific diagrams and labels,  ***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?*** • planning different types of scientific enquiries to	• recording using scientific diagrams and labels.  • use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.  • planning different types of scientific enquiries to answer questions, including recognising and controlling variables	**Investigate / understand** **What is the impact of fresh fruit and vegetables on scurvy?** • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  • identifying scientific evidence that has been used to support or refute ideas or arguments  **Investigate / understand** **How does the circulatory system work? Explain using diagram.**

	 **Investigate / understand:** **(Investigation)** **Which food is this beak shape the best adapted to eating?** • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  • recording data and results of increasing complexity using tables  • reporting and presenting findings from enquiries, including conclusions, and explanations 	answer questions, including recognising and controlling variables where necessary  • recording data and results of using line graphs.  • 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)  • using test results to make predictions to set up further comparative and	where necessary.  • taking measurements, using a range of scientific equipment, with increasing accuracy and precision. 	• Recording data and results of increasing complexity using scientific diagrams and labels,  **Investigate / understand** **What is the impact of exercise on your circulatory system? Pulse rate after certain lengths of time exercising.** • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  *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

	• 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)  • identifying scientific evidence that has been used to support or refute ideas or arguments  **(Discuss where link investigation findings to Darwin's findings and other evolution theorists**)	fair tests (discussion to feed into next test)  **Investigate/ understand How can we change the outcome of a circuit? (Unsupported volume of decibels)** • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary  • recording data and results of increasing complexity scatter graphs,  • reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and		 • recording data and results of increasing complexity using tables, scatter graphs,  • 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  • using test results to make predictions to set up further comparative and fair tests  (Types of exercise, after exercise, wearing weights?)

		degree of trust in results, in oral-and written forms such as displays and other presentations (Discussion of accuracy using 3 recordings, different recoding equipment compared to just observations)  • 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  *identifying scientific evidence that has been used to support or refute ideas or arguments		

Sequence of lessons	**Lesson 1** EQ1 How can we organise animals into different groups? Why would we do this? 1.What is classification? 2.How do I start to classify? **Lesson 2/3** EQ2 : How do different soring and classification diagrams work? 3. Using a given key to classify 4. Creating a key to classify **Lesson 4** EQ3: How do we know living things used to inhabit the Earth? 5.Handling session **Lesson 5** EQ4: What is the importance of fossils and how are they formed? 6.What are fossils and how are they formed? 7..Create diagram 8.Discuss importance	**Lesson1** EQ1 What apparatus is needed To construct a simple circuit and how do I record this? 1.Construct a working circuit. 2. Label the components **Lesson 2** 3.Investigating symbols and using them to record a circuit. **Lesson 3 / 4** EQ2; How can the outcome of a circuit be affected? LUX 4. Unsupported investigation. Discussion scientific and LUX **Lesson 5/ 6** EQ3 How could we make our investigation more scientific when investigating the outcome?	**Lesson 1** I can explain that light travels in straight lines. **Lesson 2** I can explain that we see things when light travels into the eye. **Lesson 3** I can explain that we see things when light is reflected from an object into the eye. **Lesson 4** I can explore the size, colour and features of a shadow, and compare shadows to reflections of objects. **Lesson 5** I can use the idea of light travelling in straight lines to explain shadow shape. **Lesson 6**	**Lesson 1** EQ1; What affects how out bodies function? 1. Consider different pictures to determine categories. EQ2: In what ways can the different categories affect how our bodies function? 2. Discuss in groups impact of different categories on body. **Lesson 2** EQ3: What is the impact of fresh fruit and vegetables on scurvy? How could it be proved? 3. Video, close activity 4. Investigation **Lesson 3 / 4**

	9,What information can they provide? EQ 5 How and why have living things changed over time? **Lesson 6** 10.Inheritance 11.Adaptation **Lesson 7** 12. (Investigation) Which food is the beak shape best adapted to eating? **Lesson 8** 13. Evolution 14. Links to Darwin's findings and other evolution theorists. 15. Evidence for evolution	5. Planning 10. Recording 11. Reporting **Lesson 8** EQ4 : 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**	Review Unit and Socrative Quiz.	EQ4; What is the human circulatory system and how does it work? 5. Gather information 6. Lift the flap 7. Labelled diagram(AT1) **Lesson 5** EQ5: What are the functions of the heart, blood vessels and blood? 8. Information 9. Present information **Lesson 6/7/8** 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.
Vocabulary:	offspring inheritance	circuit symbol	light light source	circulatory system heart

	variations characteristics adaptation habitat environment evolution natural selection fossil adaptive traits inherited traits scientific diagrams classification keys variables scientific enquiry bar graph line graph conclusions predictions fair test comparative test scientific evidence support and refute tweezers	bulb buzzer volume cell / battery current amps voltage decibel LUX Resistance Electrons 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	reflection incident ray reflected ray the law of reflection shadow transparent translucent opaque straight 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	blood vessels oxygenated blood de-oxygenated blood pumps oxygen drug alcohol nutrients lifestyle diet plasma platelets pulse pulse rate BPM report present conclusions causal relationship explanations degree of trust results presentation variables data scientific diagrams findings report explain presentations

		Equipment repeated	precision reporting presenting conclusions explanations degree of trust	measurements pulse meter equipment stopwatch BPM Accuracy precision
Additional non-fiction reading				

BPM