Scientific Enquiry Planning (Year 6)

Content/ Knowledge	Animals Including Humans	Electricity	Living things and Habitats	Light	Evolution and Inheritance
	I can identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood. I can describe the ways in which nutrients and water and transported within animals including humans. I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	To compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. To use recognised symbols when representing a simple circuit in a diagram.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Scientific Enquiry	Comparative and fair testing Which type of exercise has the greatest effect on our heart rate? How does the length of time we exercise for affect our heart rate? Can exercising regularly affect your lung capacity? Observation over time How does my heart rate change over the day? How much exercise do I do in a week? Pattern seeking Is there a relationship between a mammal's size and its gestation period? Identifying, grouping and classifying Compare this collection of animals based on similarities and differences in their lifecycle. Research using secondary sources How have our ideas about disease and medicine changed over time?	Comparative and fair testing Which type of fruit makes the best fruity battery? How does the voltage of the batteries in a circuit affect the brightness of the lamp? How does the voltage of the batteries in a circuit affect the volume of the buzzer? Observation over time Pattern seeking Are the oldest children in our school the tallest? Identifying, grouping and classifying How would you group electrical components and appliances based on what electricity makes them do? Research using secondary sources How has our understanding of electricity changed over time?	Comparative and fair testing Which is the most common invertebrate on our school playing field? What is the most common eye colour in our class? How does the temperature affect how much gas is produced by yeast? Observation over time What happens to a piece of bread if you leave it on the windowsill for two weeks? How do different animal embryos change? Pattern seeking Is there a pattern between the size and shape of a bird's beak and the food it will eat? Do larger flowers have more petals? Identifying, grouping and classifying How would you make a classification key for vertebrates/invertebrates or microorganisms? Research using secondary sources What do different types of microorganisms do? Are they always harmful?	Comparative and fair testing Which material is most reflective? How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface? Observation over time Does the temperature of a light bulb go up the longer it is on? How does my shadow change over the day? Pattern seeking Does the temperature of a light bulb go up the longer it is on? Is there a pattern to how bright it is in school over the day? And, if there is a pattern, is it the same in every classroom? Identifying, grouping and classifying Can you identify all the colours of light that make white light when mixed together? What colours do you get if you mix different colours of light together? Research using secondary sources Why do some people need to wear glasses to see clearly?	Comparative and fair testing Which type of sugar dissolves the fastest? How does the temperature of tea affect how long it takes for a sugar cube to dissolve? Observation over time How does a container of salt water change over time? How does a sugar cube change as it is put in a glass of water? Pattern seeking Do all stretchy materials stretch in the same way? Identifying, grouping and classifying Compare the skeletons of apes, humans, and Neanderthals – how are they similar, and how are they different? Can you classify these observations into evidence for the idea of evolution, and evidence against? Research using secondary sources

				How do astronomers know what stars are made of?	What happened when Charles Darwin visited the Galapagos islands?