Year 6

Town Field Primary Long Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
National Curriculum Objectives	**Light** - 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.	**Electricity** -associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit -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 -use recognised symbols when representing a simple circuit in a diagram.	**Living things and their habitats** -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.	**Evolution and Inheritance** -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.	**Animals Including Humans** - identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood - recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function - describe the ways in which nutrients and water are transported within animals, including humans.
TAPS Assessment	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate – investigating shadows Plan different types* of scientific enquiries to answer their own questions, including recognising and controlling variables where necessary – ight questions	Plan different types* of scientific enquiries to answer their own questions, including recognising and controlling variables where necessary – bulb brightness	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs – outdoor keys Report and present findings from enquiries, inc conclusions and causal relationships, in oral and written forms such as displays and other presentations, using appropriate scientific language – invertebrate research		Explain degree of trust in results. Identify and evaluate scientific evidence (their own and others') that has been used to support or refute ideas or arguments – fossil habitats and egg strength.	Use test results to make predictions to set up further comparative and fair tests – heart rate
Science Capital Opportunities	-Anderson shelters were very dark places to be. What sources of light could be used to light the shelter? How could they measure the brightness of each light source? -Children could design and create a periscope for use on a WWII submarine or in the trenches. -Design a WWII searchlight by performing a comparative test to compare the different brightnesses of bulb with or without reflectors around the bub. (STEM) -Blackout blinds were used on all windows and doorways so that enemy bombers would not be able to identify urban areas Which is the best material to create a blackout blind? How could you measure the effectiveness? -Research how light was used to calculate the angle needed to drop a bouncing bomb and carry out an investigation to find out the angle of beam compared to the height of the plane. (STEM)	-The Second World War showed an increase reliance on the use of electricity from creating complex circuits to power search lights, sending signals to set off air raid sirens and sending messages to different positions on the fighting line. Research advances during technology during the war. -As part of the messaging system the Army and Navy etc. used the Morse code. Challenge the children to make their own electrical circuit which recreates a Morse code system, possibly even with a different switch for the longer and shorter light flashes.	- . Children should have the opportunity to use classification systems to identify plants and animals in the immediate environment and the wider local environment e.g. Sandal Beat . Research unfamiliar animals from different biomes and decide where they belong in a classification system. -In reading lessons find out more about the scientist Carl Linnaeus. -Children could find out more about female scientist Margaret Fountaine, use classification keys to classify them and make a branching database in computing lessons to help others to identify them.	opportunities for the children to learn about the strategies animals adopt to survive winter in temperate zones and about the adaptations exhibited by animals in the Polar Regions. Children compare these strategies and identify similarities and differences in the ways animals are adapted to survive throughout the winter. They then sort different animals according to whether they migrate, hibernate, store food or grow a thick coat in order to survive over winter. Look at animals such as the Arctic fox and snow-shoe hare and identify how they are adapted to their environment then produce their own case study choosing from a given list of species -Study the life and work of Charles Darwin in English. Read some of his work and analyse the terminology and use of archaic grammatical structures and language. -Use the text What Mr Darwin Saw as a stimulus for writing. Produce a detailed biography about Darwin's life and works. -Carry out comparative tests to find out how adaptations in beak structure led to speciation of finches in the Galapagos. -In Art, use annotated sketches from Darwin's voyage on the Beagle and first hand observations of plants and animals in the local area to create detailed scientific sketches	Children could draw anatomical diagrams of the heart. Children could work with members of the local community, such as health professionals, sports people and safer neighbourhood team and Safety Crew to recognise the impact of exercise, drugs and lifestyle on the way their bodies work Children could ask questions about how exercise can impact the way the body functions and plan whole school changes to activities that could take place within Daily Mile sessions.