Town Field Primary Long Term Plan

Year 5

	Autumn 1	Autumn 2	Spring 1		Spring 2	Summer 1	Summer 2
National Curriculum Objectives	**Forces** -explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object -identify the effects of air resistance, water resistance and friction, that act between moving surfaces -recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	. **Living things and their habitats.** - describe the life process of reproduction in some plants and animals.	**Earth and Space** - describe the movement of the Earth, and other planets, relative to the Sun in the solar system - describe the movement of the Moon relative to the Earth -describe the Sun, Earth and Moon as approximately spherical bodies - use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	**<u>Living things and their habitats.</u>** - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird - describe the life process of reproduction in some plants and animals.	**Animals Including Humans** - describe the changes as humans develop to old age.	**Properties and changes of materials** -compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets - know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution - use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - demonstrate that dissolving, mixing and changes of state are reversible changes - explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	**Living things and their habitats** -describe the life process of reproduction in some plants and animals.
TAPS Assessment	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate – spinners 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 -aquadynamics	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs -craters		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 – life cycle research	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate – growth survey	Plan different types* of scientific enquiries to answer their own questions, including recognising and controlling variables where necessary – dissolving and nappy absorbency. Use test results to make predictions to set up further comparative and fair tests – insulation layers Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. 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 – champion tapes	
Science Capital Opportunities		Pupils should raise questions about their local environment throughout the year. Observe plants and animals at different stages of their life-cycle.	Children could look at the origin of the constellations and identify the Greek constellations we know today. About 2,500 years ago, the Greeks realized that the Earth is a sphere. Children could research how ancient Greek Astronomers used evidence from a lunar eclipse to make their theory. Children could find out more about Eratosthenes and his work using shadows to estimate the size of the Earth and set up their own shadow experiments to explore the relationship between the Earth and the sun. Children could find out more about Aristotle and his geocentric theory. Children could work scientifically to disprove his theory and look at changes in scientific theory over time.	Children should have the opportunity to explore the local environment of the school and the wider environment (e.g. Sandal beat, Austerfield or Potteric Carr) and look at plants and animals at different stages of their life cycle. Children should have the opportunity to grow and harvest their own vegetables or fruit from seed and also grow new plants from part of a parent plant- for example the top part of vegetables. They should get to observe first-hand the changes in an animal over time e.g brine shrimp or triops. They should compare the life cycles of animals in the UK to those of the animals in different regions of North America Children should focus on one naturalist or animal behaviourist and study their contribution to science.	. Links to the Big Talk Potential to speak to school nurse/health visitors/midwifes or link with TM and roots of empathy baby.	-Children should find out how chemists create new materials by researching famous chemists and linking to local industry e.g. Pilkington glass	