MEDIUM TERM PLANNING | UNIT OBJECTIVES
Nunthorpe Primary Academy

Year Group: 6

Science

Science Intent
Through science, children are taught to be curious about the world around them. Our curriculum is stimulating, engaging and challenging and ensures full coverage of the National Curriculum. It fosters a sense of wonder about natural phenomena. Children develop and use a range of scientific skills including questioning, fair-testing and drawing conclusions. Scientific vocabulary is taught and built upon as topics are revisited progressively in different year groups and across key stages.

Science – National Curriculum/Skills	Overview
Living things and their habitats - Classification 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 Work Scientifically by: • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. • identifying scientific evidence that has been used to support or refute ideas or arguments.	Learn about Carl Linnaeus and the accepted classification system for living things. Sort animals and plants based on their characteristics and form a classification tree diagram. They will explain why animals and plants are part of a particular group by identifying key features.

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Scientific Vocabulary: Carl Linnaeus, classification, animal, plant, kingdom, phylum, class, vertebrate, invertebrate, fish, bird, reptile, mammal, amphibian, mollusc, worm, arthropod, arachnid, insect, myriapod.	

Science– National Curriculum/ Skills	Overview
Evolution & 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. Work scientifically by: • observing and raising questions about local animals and how they are adapted to their environment • comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. • analysing the advantages and disadvantages of specific adaptations. • Interpreting classification keys	Children will begin by studying a timeline from the formation of the earth to the present day. In this way, they will gain an appreciation of the vastness of time and how this helps us to accept the idea of evolution. They will study how the features of an animal make them well adapted to the environment they live in and how this is necessary for survival and reproduction. Children will learn the process of evolution through detailed reading of the story of the 'Rinkidinks' – Book 'Little Changes' by Tiffany Taylor Use practical activity to model the work of Darwin in a very 'hands on' and visual way (using 'Duck Design'

• Identifying scientific evidence that has been used to support or refute ideas or arguments Scientific Vocabulary – Evolution, natural variation, adaptation, habitat, environment, survival, fittest, reproduction, fossil, evidence, offspring.	and 'Springbeaks' by 'TDTS') and show how evolution has happened and is still happening.
Science – National Curriculum/ Skills	Overview
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. Work scientifically by: - using repeat readings for reliability. - recognising and controlling variables in an investigation. - using scientific language to communicate and justify ideas and conclusions based on a set of results. - using standard symbols to draw a circuit diagram. - describing different ways to make a bulb brighter or dimmer (motor faster / slower, buzzer louder/ quieter). - working systematically, changing one component at a time in an investigation.	Children will learn how to draw and read circuit diagrams, identify and troubleshoot problems with circuitry and build circuits for different purposes. They will investigate lots of different ways to make bulbs brighter and dimmer including dimmer switches and apply this learning to motors and buzzers. They will explore parallel circuitry as a way to make bulbs bright without needing too many cells. They will also learn how electricity can be generated by transfer of energy from different sources (including sustainable and non-sustainable) and demonstrate this by making a generator and a lemon battery.

Scientific vocabulary – circuit, electricity, series, parallel, connect, disconnect, switch, bulb, cell, battery, voltage, power, electron, conductor, insulator, terminal, positive, negative, resistance.	
Science – National Curriculum knowledge/skills	Overview
Heart and Health – see cross curricular topic	
Science – National Curriculum knowledge/skills	Overview
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. Work scientifically by: - taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - using test results to make predictions to set up further comparative and fair tests - 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	Children will learn about light, how we see, shadows, reflection and refraction. The children will learn how light travels and how this enables us to see objects. They will demonstrate their knowledge by making and starring in their own television programme. The children will have the opportunity to make a functioning periscope, finding out about mirrors and the angles of reflection and incidence. They will work scientifically and collaboratively to investigate refraction, carrying out some fascinating experiments into the effects of bending light. Furthermore, they will have chance to predict what will happen in an exciting investigation into the visible spectrum. They will work in a hands-on way to explore how light creates the colours we see, designing coded messages. Finally, they will learn about Isaac Newton and his theory of light and colour, performing a shadow puppet play about his discoveries and ideas