



Science Curriculum Overview

| Year Group | Term | | | | | |
|------------------|---|---|---|---|---|---|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| EYFS - Nursery | <p>Investigating Magnets (CP)</p> <p>Gloop- Exploring the strange properties of this cross between a liquid and a solid.</p> <p>Career/ important person: Magnet Engineer</p> <p>Asking questions</p> | <p>Floating and Sinking- Begin to discuss different forces. (Row, Row, Row your boat)</p> <p>Basic Body Parts- Can we name and find basic parts of the body (Head Shoulders Knees & Toes)</p> <p>Discovering magnification- link to woodlands.</p> <p>Career/ important Person: Doctor / nurse</p> <p>Asking questions Making predictions Setting up tests</p> | <p>Freezing and Melting- Can you rescue the animals from the ice? Discuss the changes.</p> <p>Career/ important person: Glaciologist</p> <p>Asking questions Making predictions Setting up tests Observing and measuring</p> | <p>Planting and Growing- Grass heads/ cress.</p> <p>Life Cycles- Chick, Caterpillar - linked to stories.</p> <p>Career/ important Person: Gardener</p> <p>Asking questions Setting up tests Observing and measuring</p> | <p>Investigating light & dark using torches.</p> <p>Career/ important person: Lighting Engineer</p> <p>Asking questions Setting up tests</p> | <p>Respecting and caring for the natural environment and living things.</p> <p>Career/ important Person: Ecologist</p> <p>Asking questions</p> |
| EYFS - Reception | <p>Topics: Woodlands Marvellous Me</p> <p>(Autumn changes) (My Busy Body) Naming parts of the body</p> | <p>Topics: Woodlands Terrific Tales Baking bread - change of state - linked to the Little Red Hen</p> <p>Changes in Autumn</p> | <p>Topics: Woodlands Amazing Animals Hot & Cold Animals habitats Pets - Vets</p> <p>(PSTT - Animals in my garden)</p> | <p>Topics: Woodlands What Can Grow?</p> <p>(PSTT - Growing plants) (Changes as we grow) Observing tadpoles</p> | <p>Topics: Woodlands Ticket To Ride</p> <p>Space (NUSTEM - Light/dark) How to catch a Star, Look Up, Black</p> | <p>Topics: Woodlands Beach Combing</p> <p>(NUSTEM - Floating and sinking) Who sank the boat? Visit to beach</p> |

| | | | | | | |
|--|---|---|---|---|--|---|
| | <p>Supporting Year 1 with relevant vocabulary.</p> <p>Career/ important person: Doctor</p> <p>Asking questions</p> | <p>(PSTT - Autumn leaves)</p> <p>Career/ important person: Baker</p> <p>Asking questions Observing and measuring</p> | <p>Career/ important person: Vet</p> <p>Asking questions</p> | <p>growing.</p> <p>Career/ important person: Meteorologist</p> <p>Asking questions Observing and measuring</p> | <p>Rabbit (Shadow tubes)</p> <p>Career/ important person: Aerospace Engineer</p> <p>Asking questions Setting up tests Observing and measuring</p> | <p>Career/ important person: Lifeguard Marine Engineer</p> <p>Asking questions Making predictions Setting up tests Observing and measuring Recording data</p> |
| <p>One</p> <p>Topic: Seasonal changes and observations</p> <p>Skill: Observing over time</p> <p>Context: Link with local study- what seasonal changes do we see in local area.</p> | <p>Topic: Animals including humans</p> <p>Skill: Use senses and simple equipment.</p> <p>Context: Five senses- practical investigations exploring the senses and learning body parts/uses.</p> <p>Career/ important person: Optician</p> <p>Asking questions Making predictions Setting up tests Observing and measuring</p> | <p>Topic: Investigating materials</p> <p>Skill: Find information and answers. Simple comparative tests: Which is the best material for...?</p> <p>Context: Material names, properties, uses- waterproof, magnetic etc. Practical investigations linking with toys topic.</p> <p>Career/ important person: Product designer</p> <p>Asking questions Making predictions Observing and measuring Setting up tests</p> | <p>Topic: Animals including humans.</p> <p>Skill: Compare and contrast. Identify and classify using given sources.</p> <p>Context: Animal classification and types of animals.</p> <p>Career/ important person: Ornithologist - zoologist looking at birds.</p> <p>Asking questions Identify and classifying</p> | <p>Topic: Career focus</p> <p>Skill: Find information using given sources. Secondary research using given sources (tables and graphs).</p> <p>Context: Be a Paleontologist- Mary Anning</p> <p>Career/ important person: Mary Anning Paleontologist</p> <p>Asking questions Setting up tests Observing and measuring Recording data Interpreting results</p> | <p>Topic: Plants</p> <p>Skill: Conduct simple comparative tests eg what happens when plants don't get light?</p> <p>Context: Link with local study- How to grow a beanstalk link in with 'Jim and the beanstalk', observing changes, what plants need to grow, types of plants/trees.</p> <p>Career/ important person: Gardener</p> <p>Asking questions Observing and measuring</p> | <p>Topic: Scientific questions</p> <p>Skill: Explain why a simple observation occurred. Ask and answer simple questions with support.</p> <p>Context: STEM week</p> <p>Asking questions Setting up tests Observing and measuring Recording data Interpreting results</p> |

| | | | | | | |
|-------|---|--|--|---|---|---|
| | | Recording data Interpreting results | | | | |
| Two | <p>Topic: Living things and their habitats.</p> <p>Skill: Understanding scientific terminology. Asking scientific questions Comparing and contrasting.</p> <p>Context: The Arctic - animal adaptation.</p> <p>Career/ important person: Environmental engineer</p> <p>Asking questions Making predictions Observing and measuring Setting up tests Recording data Interpreting results</p> | <p>Topic: Animals</p> <p>Skill: Find information and answers using given sources.</p> <p>Skill: Classifying animals. Identifying offspring, food chains</p> <p>Context: Animal portion of 'animals including humans'</p> <p>Career/ important person: Zoo veterinarian</p> <p>Asking questions Secondary research Identifying and classifying</p> | <p>Topic: Roald Dahl</p> <p>Skill: Making simple predictions. Making simple estimations. Observing over time. Asking and answering simple questions. Recording simple data in a given table. Evaluate the effectiveness of observations (verbally)</p> <p>Context: Experiments - Roald Dahl and Farmers</p> <p>Career/ important person: Farmer</p> <p>Asking questions Making predictions Observing and measuring Setting up tests Recording data Interpreting results</p> | <p>Topic: Animals including humans</p> <p>Skill: Knowledge building to describe how to stay healthy (hygiene)</p> <p>Context: human portion of 'animals including humans'</p> <p>Career/ important person: Surgeon</p> <p>Asking questions Observing and measuring</p> | <p>Topic: Uses of everyday materials</p> <p>Skill: Making simple predictions. Conduct simple comparative tests. Explain why a simple observation occurred.</p> <p>Context: Suitability of materials to build a dragon proof house – Dragons.</p> <p>Career/ important person: John Dunlop, Charles Macintosh, John McAdam</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> | <p>Topic: Plants</p> <p>Skill: Identify and classify using a range of given sources. Observing over time. Conduct simple comparative tests. Explain why a simple observation occurred. Measure change over time using non-standard measure.</p> <p>Context: Looking at plants in different habitats. Taking care of plants.</p> <p>Career/ important person: Greenhouse Manager</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> |
| Three | <p>Topic: Light</p> <p>Skill: To identify scientific questions. To link two variables – the closer the light</p> | <p>Topic: Animals including humans</p> <p>Skill: To identify and classify animals. Use labelled diagrams and</p> | <p>Topic: Magnets and forces</p> <p>Skill: To ask scientific questions and answer these by setting up simple</p> | <p>Topic: Plants</p> <p>Skill: Make observations over time by investigating how water is transported within</p> | <p>Topic: North East Engineers</p> <p>Skill: To ask and answer scientific questions. Linking careers to</p> | <p>Topic: Rocks</p> <p>Skill: To identify and classify types of rock. To make careful observations. To conduct fair tests.</p> |

| | | | | | | |
|------|--|---|--|--|--|--|
| | <p>source, the bigger the shadow. To measure using standard units of measure (cm). To carry out comparative and fair tests. To make predictions. To show data in bar charts / tables.</p> <p>Context: Measuring shadows, experiments with reflections, finger puppets, absence of light investigation,</p> <p>Career/ important person: Optometrist</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Pattern seeking Scaffolded interpretation of results</p> | <p>drawings. Explain observations in scientific terms.</p> <p>Context: To create muscles, identify muscles within the body. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>Career/ important person: Dietitian</p> <p>Asking questions Identifying and classifying</p> | <p>practical enquiries, comparative and fair tests. To make predictions. To make observations.</p> <p>Context: Solving problems using magnets, how could a magnet help us separate items.</p> <p>Career/ important person: Recycling officer</p> <p>Asking questions Making predictions Observing and measuring Recording data</p> | <p>plants. Explain an observation or event in scientific terms. Distinguish between what has been observed and why it happened. Begin to link information from secondary sources with primary sources (verbally).</p> <p>Context: Exploring the outdoor environment locating different habitats</p> <p>Career/ important person: Crop consultant</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Pattern seeking</p> | <p>scientific knowledge.</p> <p>Context: North East Science - links with Stephenson Museum</p> <p>Career/ important person: George Stephenson</p> <p>Mechanical engineer</p> <p>Asking questions Secondary research Interpreting results</p> | <p>To make predictions. To draw conclusions upon reasons for variation of soil. Explain observations in scientific terms.</p> <p>Context: Identify fossils and differences in rocks (using the Stone Age Boy text)</p> <p>Career/ important person: Geologist</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> |
| Four | <p>Topic: Animals including humans</p> <p>Skill: To ask scientific questions To conduct scientific enquiries</p> | <p>Topic: Electricity</p> <p>Skill: To ask scientific questions Create electric circuits Make careful</p> | <p>Topic: States of matter</p> <p>Skill: To ask scientific questions Make careful observations</p> | <p>Topic: Sound</p> <p>Skill: To ask scientific questions To take accurate measurements To show data using</p> | <p>Topic: Living things and their habitats</p> <p>Skill: To ask scientific questions To use simple classification keys</p> | <p>Topic: STEM</p> <p>Skill: To ask scientific questions and find answers to these To set up practical enquiries with more</p> |

| | | | | | | |
|------|---|---|--|--|--|---|
| | <p>Draw simple conclusions, explaining why they have observed what they have Make careful observations</p> <p>Context: Digestive system (Human Body)</p> <p>Career/ important person: Dentist</p> <p>Asking questions Secondary research Making predictions Observing</p> | <p>observations</p> <p>Context: Electricity</p> <p>Career/ important person: Electrician</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> | <p>To set up practical enquiries with more independence To make predictions, considering the variables Report on findings from enquiries Draw simple conclusions, explaining why they have observed what they have.</p> <p>Context: States of Matter</p> <p>Career/ important person: Hydrologist Chemist</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> | <p>graphs To create labelled scientific diagrams and drawings to show abstract phenomena such as sound.</p> <p>Context: Sound</p> <p>Career/ important person: Sound engineer</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Interpreting results Pattern seeking</p> | <p>To select information to support findings Make careful observations Gather and record data Draw diagrams Report on findings from enquiries</p> <p>Context: Living Things and Habitats</p> <p>Career/ important person: Conservation Research Assistant</p> <p>Asking questions Secondary research Identifying and classifying</p> | <p>independence To make predictions, considering the variables To make accurate measurements To show data using graphs</p> <p>Context: Scientific Inventors STEM Week Animals including humans recap</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> |
| Five | <p>Topic: Space and Earth</p> <p>Skill: Asking scientific questions Drawing diagrams Set up practical enquiries Report on findings Make careful</p> | <p>Topic: Forces</p> <p>Skill: Asking scientific questions Take accurate and precise measurements Draw scientific diagrams to show abstract phenomena such as forces using arrows.</p> | <p>Topic: Materials and their properties</p> <p>Skill: Asking scientific questions Take accurate and precise measurements To identify when and how to use scientific tests Make predictions</p> | <p>Topic: Materials and their properties</p> <p>Skill: Asking scientific questions Take accurate and precise measurements To identify when and how to use scientific tests Make predictions</p> | <p>Topic: Living things and their habitats</p> <p>Skill: Asking scientific questions Use more complex classification keys Make careful observations Draw scientific diagrams to show parts of a plant</p> | <p>Topic: Animals, including humans</p> <p>Skill: Asking scientific questions Draw scientific diagrams Use a range of secondary sources to conduct research</p> |

| | | | | | | |
|-----|--|---|---|---|--|--|
| | <p>observations Explore relevant information by using a range of secondary sources Explore how scientific ideas have changed over time Use diagrams to show the solar system</p> <p>Context: Link Black History Month– Katherine Johnson and careers</p> <p>Career/ important person: Katherine Johnson and Nicolaus Copernicus</p> <p>Asking questions Secondary research</p> | <p>Identify causal relationships Make predictions based upon previous enquiries Draw conclusions, explaining why something has happened Show data in line graphs</p> <p>Context: Forces</p> <p>Career/ important person: Isaac Newton</p> <p>Asking questions Comparative tests Making predictions Observing and measuring Recording data Interpreting results Pattern seeking Secondary research</p> | <p>based upon previous enquiries Set up practical enquiries Report on findings from enquiries Draw conclusions, explaining why something has happened</p> <p>Context: Changes in material</p> <p>Career/ important person: Structural engineer</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results Pattern seeking</p> | <p>based upon previous enquiries Set up practical enquiries Report on findings from enquiries Draw conclusions, explaining why something has happened</p> <p>Context: Changes in material</p> <p>Career/ important person: Structural engineer</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results Pattern seeking</p> | <p>Set up practical enquiries with increased independence Report on findings from enquiries Draw simple conclusions</p> <p>Context: Living things and their habitats</p> <p>Career/ important person: Environmental scientist</p> <p>Asking questions Identifying and classifying Making predictions Observing and measuring Recording data Interpreting results</p> | <p>Context: Animals, including humans</p> <p>Career/ important person: Health visitor</p> <p>Asking questions Secondary research</p> |
| Six | <p>Topic: Evolution</p> <p>Skill: Develop classification keys Identify scientific evidence that has been used to support or refute ideas or arguments. Recording data and results of increasing</p> | <p>Topic: Electricity</p> <p>Skill: Taking measurements (voltage), using a range of scientific equipment, with increasing accuracy and precision Identify when and how to use tests</p> | <p>Topic: Animals, including humans</p> <p>Skill: Take accurate and precise measurements Take repeat readings when appropriate Using simple models to describe scientific ideas.</p> | <p>Topic: Light</p> <p>Skill: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Using simple models</p> | <p>Topic: Living things and their habitats</p> <p>Skill: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p> | <p>Topic: STEM</p> <p>Skill: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as</p> |

| | | | | | | |
|--------------------|---|---|--|---|---|---|
| | <p>complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p> <p>Context: Evolution and Inheritance -present information about evolution Scientists.</p> <p>How might offspring vary?</p> <p>Career/ important person: Charles Darwin</p> <p>Asking questions Secondary research Identifying and classifying</p> | <p>Make predictions based on previous test results</p> <p>Context: Electricity</p> <p>Does wire length affect the brightness of a bulb?</p> <p>Career/ important person: Electrical engineer</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> | <p>Context: Animals including humans NUSTEM workshop</p> <p>Career/ important person: Haematologist</p> <p>Asking questions Making predictions Observing and measuring Recording data Interpreting results Pattern seeking Identifying and classifying</p> | <p>to describe scientific ideas. Use test results to make predictions to set up further comparative and fair tests Use models or diagrams to show abstract phenomena such as light</p> <p>Context: Light - experiment to investigate how light travels and what colour light is.</p> <p>Career/ important person: Isaac Newton</p> <p>Asking questions Identifying and classifying Making predictions Observing and measuring Recording data Interpreting results Pattern seeking</p> | <p>Using test results to make predictions to set up further comparative and fair tests (Microorganisms) Develop classification keys</p> <p>Context: Living things in their habitats</p> <p>Career/ important person: Cancer research scientist Carl Linnaeus</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results</p> | <p>displays and other presentations Reach appropriate conclusions and begin to identify how reliable the data collected is</p> <p>Context: STEM Week</p> <p>Asking questions Identifying and classifying Comparative tests Making predictions Observing and measuring Recording data Interpreting results Pattern seeking</p> |
| | | | | | | |
| Scientific enquiry | Year 1 and 2 | | Year 3 and 4 | | Year 5 and 6 | |
| | <p>During Years 1 and 2 pupils should be taught to use the following practical scientific methods, processes and skills through teaching:</p> <p>-Asking simple questions and recognising they can be answered in different ways (question walls and concept maps on flip charts with class teacher).</p> | | <p>During Years 3 and 4 pupils should be taught to use the following practical scientific methods, processes and skills through teaching:</p> <p>-Asking relevant questions and using different types of scientific enquiry. Concept maps and question walls.</p> <p>-Setting up simple practical enquiries, comparative and fair tests.</p> | | <p>During Years 5 and 6 pupils should be taught to use the following practical scientific methods, processes and skills through teaching:</p> <p>-Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> | |

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> -Observing closely, using simple equipment. -Performing simple tests. -Identifying and classifying. -Using their observations and ideas to suggest answers to questions. | <ul style="list-style-type: none"> -Making careful and systematic observations and taking accurate measurements using standard units, using a range of equipment. - Gathering, recording, classifying and presenting data. -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. -Reporting on findings from enquiries through answering with Tweets / emails. -Using results to draw simple conclusions. -Identifying differences, similarities or changes related to simple scientific ideas and processes. -Using straightforward scientific evidence to answer questions. | <ul style="list-style-type: none"> -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. -Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. -Using test results to make predictions. -Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. -Identifying scientific evidence that has been used to support or refute ideas or arguments. |
|--|---|--|--|