Science Year Planner – Year 3 and 4 2022 2023

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| *Term* | *Autumn 1*  | *Autumn 2* | *Spring 1* | *Spring 2* | *Summer 1 and 2* |
| *Topic* | *Plants* *(Year 3)* | *Animals Including Humans* *(Year 4)* | *Rocks* *(Year 3)* | *Forces and Magnets* *(Year 3)* | *States of Matter* *(Year 4)* |
| *Termly Project**:*  | *Tribal Tales*  | *Rocks, Relics and Rumbles* | *Misty Mountains, Winding Rivers* |
| *Science discipline:*  | *Biology* | *Biology* | *Chemistry* | *Physics* | *Physics* |
| *Science Knowledge NC Focus:* | * identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
* explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
* investigate the way in which water is transported within plants
* explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
 | * describe the simple functions of the basic parts of the digestive system in humans
* identify the different types of teeth in humans and their simple functions
* construct and interpret a variety of food chains, identifying producers, predators and prey
 | * compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
* describe in simple terms how fossils are formed when things that have lived are trapped within rock
* recognise that soils are made from rocks and organic matter
 | * compare how things move on different surfaces
* notice that some forces need contact between 2 objects, but magnetic forces can act at a distance
* observe how magnets attract or repel each other and attract some materials and not others
* compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
* describe magnets as having 2 poles
* predict whether 2 magnets will attract or repel each other, depending on which poles are facing
 | * compare and group materials together, according to whether they are solids, liquids or gases
* observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)
* identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
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| *Assessment for Learning and Enquiry Book* |  | A picture containing text, fabric  Description automatically generated | A picture containing text  Description automatically generated | Magnet Max (Learning League): Amazon.co.uk: Hughes, Monica Lozano,  Weinstein, Holly: 9781612542249: Books | Oscar and the Bird: A Book about Electricity Start with Science Books  Paperback: Amazon.co.uk: Waring, Geoff: Books |
| *Sequence of learning:*  | **Sequence of learning:**1. I can reflect on prior knowledge and ask scientific questions.2. I can name the basic parts of a flower. 3. I can investigate what plants need to grow well.4. I can observe how water is transported in plants.5. I can explain pollination and fertilisation.6. I can order the stages in a lifecycle of a plant. | **Sequence of learning:**1. I can reflect on prior knowledge and ask scientific questions.2. I can identify and name the parts of the human digestive system.3. I can explain the functions of the digestive system.4. I can identify the types of teeth and their functions.5. I can create a model of teeth to investigate their functions. I can appropriately record my results. 6. I can construct and interpret a range of food chains. | **Sequence of learning:**1. I can reflect on prior knowledge and ask scientific questions.2. I can make compare and group rocks based on their physical appearance.3. I can make systematic and careful observations by examining different types of rocks.4. I can explain that fossils are formed when things that have lived are trapped within rock.5. I can research Mary Anning’s contribution to palaeontology. 6. I can recognise that soils are made from rocks and organic matter. I can examine soil. | **Sequence of learning:**1. I can reflect on prior knowledge and ask scientific questions.2. I can identify forces. I can compare how a toy car moves on different surfaces.3. I can describe magnets as having two poles. I can predict whether two magnets will attract or repel.4. I can test whether materials are magnetic or non-magnetic.5. I can investigate and compare the strength of different magnets.6. I can use magnetism to create a compass to hunt from treasure. | **Sequence of learning:**1. I can reflect on prior knowledge and ask scientific questions.2. I can explain ways that electricity is generated. I can name common appliances that run on electricity.3. I can construct a simple electrical circuit. I can name the basic parts.4. I can identify whether or not a lamp will light.5. I can recognise that a switch opens and closes a circuit.6. I can recognise common conductors and insulators. |
| End Point:  | Children will learn the relationship between structure and function: the idea that every part has a job to do; explore questions that focus on the role of the roots and stem in nutrition and support; leaves for nutrition and flowers for reproduction. | Children will learn the main body parts associated with the digestive system; explore questions that help children to understand their special functions. | Children can explore different kinds of rocks and soils , including those in the local environment. | Children can observe that magnetic forces can act without direct contact; explore the behaviour and everyday uses of different magnets | Children can explore a variety of everyday materials and develop simple descriptions of the states of matter; observe water as a solid, a liquid and a gas; note the changes to water when it is heated or cooled. |
| Vocabulary:  | **Vocabulary throughout:**Extinct, flower, fruit, nectar, ovary, ovule, petal, pollen, seed, stigma, style, stamen | **Vocabulary throughout:**Canines, incisors, large intestine, molars, oesophagus, premolars, rectum, small intestine, stomach, tongue | **Vocabulary throughout:**Arthropod, humus, igneous rock, metamorphic rock, sedimentary rock, palaeontologist, weathering | **Vocabulary throughout:** Force, friction, magnetic material, non-magnetic material, North Pole, South Pole, sliding friction, static friction | **Vocabulary throughout:**Atom, battery, cell, circuit, component, current electricity, negative terminal, positive terminal, static electricity, voltage |