

Science long-term plan

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| | Seasonal changes covered throughout the year | | | | | |
| <u>Sunnyhurst</u> Cycle A | Animals -humans Why are Humans not like tigers? | | Everyday materials What materials do we use every day? | | Seasonal changes Why do flowers close at night? | Plants - basic structure Which plants and birds would Evie find in our garden? |
| | <p>Coverage: Classifying animals – humans</p> <p>Key knowledge: Name the parts of the body that they can see Identify, name, draw parts of the human body and link them to the senses.</p> | | <p>Coverage: Naming different materials.</p> <p>Key Knowledge: Know the name of the materials an object is made from Know about the properties of everyday materials Know that some materials appear naturally and that some are manmade</p> | | <p>Coverage: Observe changes across the four seasons. Observe and describe weather associated with the seasons Key Knowledge Know how day length varies Spring and summer</p> | <p>Coverage Knowing parts of plants and trees</p> <p>Key Knowledge: Know and name a variety of common wild and garden plants Know and name the petals, stem, leaves and root of a plant and name the roots, trunk, branches and leaves of a tree</p> |
| | Seasonal changes covered throughout the year | | | | | |
| <u>Sunnyhurst</u> Cycle B | Seasonal changes Why are there so many leaves on the floor? | | Animals - other Why would a dinosaur not make a good pet? | | Plants Do all plants have roots? | <u>Animals other</u> How can I sort animals |
| | <p>Coverage Seasonal changes</p> | | <p>Coverage Variety of common animals Structure Group together Key knowledge:</p> | | <p>Coverage observe the growth of flowers and vegetables they have planted.</p> | <p>Coverage identify and name common animals, fish amphibians, reptiles birds and mammals. Focus sea creatures.</p> |

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| | <p>Key knowledge:</p> <p>Name the seasons and know about the type of weather in each season Identify changes in leaf colour Observe decay over time</p> | <p>Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds Know and classify animals by what they eat (carnivore, herbivore and omnivore) Know how to sort by living and non-living things</p> | <p>Key Knowledge</p> <p>Know the basic structure of plants and trees. Know the names of common plants and trees</p> | <p>Key knowledge: know that some animals are carnivores, herbivores or omnivores. Know and name the basic body parts of different animals.</p> |
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| Anglezarke Cycle A | Environment- Living things and their habitat. How are habitats suited to different animals? | Properties use of materials What would Traction Man use to build our school? | Health how we grow and stay healthy How will 5 a day keep me healthy? | Plants – functions and parts of a plant How important is pollination? | Plant - growth How quickly do plants grow? | Forces – noncontact forces What makes a material magnetic? |
| | <p>Coverage</p> <p>Habitats Food Chains Key knowledge</p> <p>Know how a specific habitat provides for the basic needs of things living there (plants and animals) Match living things to their habitat. Name some different sources of food for animals. Know about and explain a simple food chain</p> | <p>Coverage:</p> <p>Using materials for different tasks</p> <p>Key Knowledge:</p> <p>Know how materials can be changed by squashing, bending, twisting and stretching Know why a material might or might not be used for a specific job</p> | <p>Coverage:</p> <p>Exercising and keeping healthy</p> <p>Key knowledge:</p> <p>Know why exercise, a balanced diet and good hygiene are important for humans Know the basic stages in a life cycle for animals, (including humans)</p> | <p>Coverage:</p> <p>Basic structure and functions of plants Life cycles transportation of water Classification of plants Key knowledge</p> <p>Know the function of different parts of flowering plants and trees Know how water is transported within plants Know the plant life cycle, especially the importance of flowers Use classification keys to group, identify and name living things Know how changes to an environment could endanger living things</p> | <p>Coverage</p> <p>How do plants grow? Keeping plants healthy</p> <p>Key knowledge</p> <p>Know and explain how seeds and bulbs grow into plants. Know what plants need in order to grow and stay healthy (water, light and suitable temperature</p> | <p>Coverage:</p> <p>Forces and magnets</p> <p>Key knowledge</p> <p>Know about and explain how magnets attract and repel Predict whether magnets will attract or repel and give a reason.</p> |

Science long-term plan

| <p><u>Anglezarke</u></p> <p><u>Cycle B</u></p> | <p>Light and astronomy – Light reflection and shadows</p> <p>How are shadows formed through light?</p> | <p>Health and Nutrition</p> <p>What do we need to stay healthy?</p> | <p>Animals, skeleton, and movement</p> <p>Do we need bones?</p> | <p>Animal survival and growth</p> <p>Why do some animals lay eggs?</p> | <p>Material properties - rocks</p> <p>What rocks are around us?</p> |
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| | <p>Coverage</p> <p>Reflections Shadows</p> <p>Key Knowledge</p> <p>Know that dark is the absence of light Know that light is needed in order to see and is reflected from a surface Know and demonstrate how a shadow is formed and explain how a shadow changes shape Know about the danger of direct sunlight and describe how to keep protected</p> | <p>Coverage</p> <p>exercise and health</p> <p>Key Knowledge</p> <p>Know about the importance of a nutritious, balanced diet Know how nutrients, water and oxygen are transported within animals and humans</p> | <p>Coverage</p> <p>Skeleton, muscles</p> <p>Key Knowledge</p> <p>Know about the skeletal and muscular system of a human</p> | <p>Coverage</p> <p>Life cycles of animals Basic needs to stay alive</p> <p>Key knowledge</p> <p>Know what animals need to survive Know that animals grow and change Know the lifecycle of a butterfly or frog</p> | <p>Coverage</p> <p>Fossil formation Compare and group rocks Soil</p> <p>Key Knowledge</p> <p>Compare and group rocks based on their appearance and physical properties, giving reasons Know how soil is made and how fossils are formed Know about and explain the difference between sedimentary, metamorphic and igneous rock</p> |

Science long-term plan

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| Roddlesworth | Electricity | Material changes – irreversible changes | Environment - classification | Sound | Animals, exercise, health, and the circulatory system | |
| Cycle A | What would the world look like if we had no electricity? | Do things disappear? | How can we group living things? | How do we hear different sounds? | What if your heart stopped? | |
| | <p>Coverage:</p> <p>Electricity Simple circuits and switches, conductors and insulators</p> <p>Key knowledge</p> <p>Identify and name appliances that require electricity to function Construct a series circuit Identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers) Predict and test whether a lamp will light within a circuit Know the function of a switch Know the difference between a conductor and an insulator</p> | <p>Coverage:</p> <p>Soluble/ dissolving Reversible and irreversible substances</p> <p>Key knowledge</p> <p>Know and explain how a material dissolves to form a solution Know and show how to recover a substance from a solution Know and demonstrate how some materials can be separated (e.g. through filtering, sieving and evaporating) Know and demonstrate that some changes are reversible and some are not Know how some changes result in the formation of a new material and that this is usually irreversible</p> | <p>Coverage</p> <p>Classification of living things into broad groups</p> <p>Key Knowledge</p> <p>Give reasons for classifying plants and animals based on specific characteristics. Living things can be grouped into micro-organisms, plants and animals. Vertebrates can be grouped as fish, amphibians, reptiles, birds and mammals. Invertebrates can be grouped as snails and slugs, worms, spiders and insects. Plants can be grouped as flowering plants (incl. trees and grasses) and non-flowering plants (such as ferns and mosses)</p> | <p>Coverage:</p> <p>Sound vibrations Pitch and Volume</p> <p>Key knowledge</p> <p>Know how sound is made, associating some of them with vibrating Know how sound travels from a source to our ears. Know the correlation between pitch and the object producing a sound Know the correlation between the volume of a sound and the strength of the vibrations that produced it Know what happens to a sound as it travels away from its source</p> | <p>Coverage:</p> <p>The circulatory system Water transportation Impact of exercise on body</p> <p>Key knowledge</p> <p>Identify and name the main parts of the human circulatory system Know the function of the heart, blood vessels and blood Know the impact of diet, exercise, drugs and lifestyle on health Know the ways in which nutrients and water are transported in animals, including humans</p> | |

Science long-term plan

| Roddlesworth | Material properties and changes – states of matter | Light and astronomy – earth and Space | Environment – evolution and inheritance | Electricity | Forces- effects of movement |
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| Cycle B | Can materials be found in all three states of matter? | Can we use shadows to tell the time? | Which animals have evolved the most? | Could you be the next Nintendo apprentice? | Does everything that goes up always come down? |
| | <p>Coverage:</p> <p>Solids, liquids and gas</p> <p>Key knowledge</p> <p>Know the temperature at which materials change state Know about and explore how some materials can change state Know the part played by evaporation and condensation in the water cycle Group materials based on their state of matter (solid, liquid, gas)</p> | <p>Coverage</p> <p>Earth and space The movement of the Earth and other planets</p> <p>Key Knowledge</p> <p>Know about and explain the movement of the Earth and other planets relative to the Sun Know about and explain the movement of the Moon relative to the Earth Know and demonstrate how night and day are created Describe the Sun, Earth and Moon (using the term spherical)</p> | <p>Coverage</p> <p>Identical and non identical off-spring Fossil evidence and evolution Adaptation and evolution</p> <p>Key Knowledge</p> <p>Know how the Earth and living things have changed over time Know how fossils can be used to find out about the past Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents) Know how animals and plants are adapted to suit their environment Link adaptation over time to evolution Know about evolution and can explain what it is</p> | <p>Coverage:</p> <p>Electrical components Simple circuits Fuses and voltage Key knowledge</p> <p>Compare and give reasons for why components work and do not work in a circuit Draw circuit diagrams using correct symbols Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer</p> | <p>Coverage:</p> <p>Gravity Friction Forces and motion of mechanical devices Key knowledge</p> <p>Know what gravity is and its impact on our lives Identify and know the effect of air and water resistance Identify and know the effect of friction Explain how levers, pulleys and gears allow a smaller force to have a greater effect</p> |

Science long-term plan

| Roddlesworth | Light and astronomy – how light travels | Living things and their habitats | Testing material properties | Environment- observing lifecycles | Animals teeth, eating and digestion |
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| Cycle C | How can you light up your life? | How can we sort living things? | Could you be the next CSI investigator? | Do all animals start life as an egg? | What happens to the food we eat? |
| | <p>Coverage:</p> <p>How light travels Reflection Ray models of light</p> <p>Key knowledge</p> <p>Know how light travels Know and demonstrate how we see objects Know why shadows have the same shape as the object that casts them Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc</p> | <p>Coverage</p> <p>Identification keys for plants and animals</p> <p>Key Knowledge</p> <p>Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses.</p> | <p>Coverage</p> <p>Compare and group together everyday materials on the basis of their properties</p> <p>Key knowledge</p> <p>Know heat always moves from hot to cold. Know some materials (insulators) are better at slowing down the movement of heat than others. Know objects/liquids will warm up or cool down until they reach the temperature of their surroundings.</p> | <p>Coverage:</p> <p>Life cycles – plants and animals</p> <p>Key knowledge</p> <p>Know the life cycle of different living things e.g. mammal, amphibian, insect and bird Know the differences between different life cycles Know the process of reproduction in plants Know the process of reproduction in animals</p> | <p>Coverage</p> <p>Digestive system and Teeth</p> <p>Key Knowledge</p> <p>Identify and name the parts of the human digestive system Know the functions of the organs in the human digestive system Identify and know the different types of human teeth Know the functions of different human teeth Use and construct food chains to identify producers, predators and prey</p> |