

| Science at St Andrew's Primary School |  |  |   |  |         |
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| Whole school Learning Links Theme     | Scientific Enquiry<br>How can a fair test help us understand the scientific world?   |  |   |  |         |
| Key Curriculum Drivers                | Knowledge  |  | Wellbeing   | Aspirations and Possibilities  |         |
| Year 1                                | Study 1  | Study 2  | Study 3   | Study 4  | Study 5 |
| Statutory Focus                       | <ul style="list-style-type: none"> <li>* identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>*identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>*describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>*identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul> | <ul style="list-style-type: none"> <li>*distinguish between an object and the material from which it is made</li> <li>*identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>*describe the simple physical properties of a variety of everyday materials</li> <li>*compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul> | <ul style="list-style-type: none"> <li>*identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>*identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul> | Continuous Provision<br><br><ul style="list-style-type: none"> <li>*observe changes across the 4 seasons</li> <li>*observe and describe weather associated with the seasons and how day length varies</li> </ul> |         |
| Big question                          | Do animals all have the same parts?  | What are the things I use made from?   | What ways can I identify a plant?   | What is it like in each season?  |         |
| Title                                 | Animals inc. humans  | Everyday materials   | Plants  | Seasonal changes   |         |
| Local Links                           | Lowe Barnes Nature Reserve   |  | School Allotments   |  |         |
| Hook                                  |  |  | Forest schools linked to plants and trees   | Local TV Weather Reports   |         |
| Post Learning Task                    |  |  |   |  |         |
| Year 2                                |  |  |   |  |         |

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| Statutory Focus | <p>*identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>*find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> | <p>*explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>*identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>*identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>*describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</p> | <p>*notice that animals, including humans, have offspring which grow into adults</p> <p>*find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>*describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> | <p>*observe and describe how seeds and bulbs grow into mature plants</p> <p>*find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> |  |
| Big question    | Why do we make things out of certain materials?  | What features do animals have that allow them to thrive in their environment?  | How do humans stay healthy?  | What things do plants need to grow?   |  |
| Title           | Everyday materials   | Living things  | Animals including humans   | Plants  |  |
| Local Links     | Walk in the local area   | School Outdoor Classroom   | Hall Hill Farm   | Botanic Garden Durham   |  |
| Hook            | Bag of materials- what is it made from   | Bushfires in Australia (Newsround)   | forest school session  | Time lapse videos of seeds and bulbs  |  |

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|                    |  |   |  | growing into mature plants   |  |
| Post Learning Task | Become an engineer and design a climbing frame, bridge, a car or something of their choice.  | Create an ideal environment for a chosen animal and prove this is a successful habitat. Record video  | How a human or animal grows from being born poster.  | What a plant needs to stay healthy leaflet for year 1.   |  |
| <b>Year 3</b>      |  |   |  |  |  |
| Statutory Focus    | <p>*identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p> <p>*identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> | <p>*compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>*describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>*recognise that soils are made from rocks and organic matter</p> | <p>*compare how things move on different surfaces</p> <p>*notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</p> <p>*observe how magnets attract or repel each other and attract some materials and not others</p> <p>*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</p> <p>*describe magnets as having 2 poles</p> <p>*predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p> | <p>*recognise that they need light in order to see things and that dark is the absence of light</p> <p>*notice that light is reflected from surfaces</p> <p>*recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>*recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>*find patterns in the way that the size of shadows change</p> | <p>*identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>*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</p> <p>*investigate the way in which water is transported within plants</p> <p>*explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> |

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| Big question       | How can animals move?<br>What is in food?  | Why are there different rocks?  | How do moving objects slow down?<br>What materials are attracted to magnets?  | What is a shadow?   | What do different parts of a plant do?   |
| Title              | Animals including humans   | Rocks   | Forces and Magnets  | Light   | Plants   |
| Local Links        |  |   | Durham Botanic Gardens  | Discovery museum - Newcastle  | Planting in school grounds   |
| Hook               | Scattered skeleton bones around the classroom and put them back together.  | Forest school   | Materials and magnets – allowing children to explore and discuss their findings in groups.  | Carousel of different activities.   |  |
| Post Learning Task | Non-chronological report   | Leaflet about different types of rocks  |   | Shadow puppet show  |  |
| <b>Year 4</b>      |  |   |   |   |  |
| Statutory Focus    | <ul style="list-style-type: none"> <li>*identify how sounds are made, associating some of them with something vibrating</li> <li>*recognise that vibrations from sounds travel through a medium to the ear</li> <li>*find patterns between the pitch of a sound and features of the object that produced it</li> <li>*find patterns between the volume of a sound and the strength of the vibrations that produced it</li> </ul> | <ul style="list-style-type: none"> <li>*compare and group materials together, according to whether they are solids, liquids or gases</li> <li>*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)</li> <li>*identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> | <ul style="list-style-type: none"> <li>*identify common appliances that run on electricity</li> <li>*construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>*identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>*recognise that a switch opens and closes a circuit</li> </ul> | <ul style="list-style-type: none"> <li>*recognise that living things can be grouped in a variety of ways</li> <li>*explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>*recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul> | <ul style="list-style-type: none"> <li>*describe the simple functions of the basic parts of the digestive system in humans</li> <li>*identify the different types of teeth in humans and their simple functions</li> <li>*construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul> |

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|                    | *recognise that sounds get fainter as the distance from the sound source increases  |  | and associate this with whether or not a lamp lights in a simple series circuit<br>*recognise some common conductors and insulators, and associate metals with being good conductors  |   |   |
| Big question       | How are sounds made?  | What happens when we heat solids?<br>What happens to puddles after it rains?   | What materials conduct electricity?   | What happens to living things when their habitat changes? | What happens to food when we eat it?  |
| Title              | Sound   | States of matter   | Electricity   | Living Things   | Animals and Humans  |
| Local Links        |   | Shildon railway museum   |   | Forest School   |   |
| Hook               |   | Melting chocolate/ ice in your hand  |   |   | Visit from Dentist  |
| Post Learning Task |   |  |   |   |   |
| <b>Year 5</b>      |   |  |   |   |   |
| Statutory Focus    | *explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object<br>*identify the effects of air resistance, water resistance and friction, | *describe the movement of the Earth and other planets relative to the sun in the solar system<br>*describe the movement of the moon relative to the Earth<br>*describe the sun, Earth and moon as approximately spherical bodies | *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<br>*know that some materials will dissolve in | *describe the changes as humans develop to old age        | *describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird<br>*describe the life process of reproduction in some plants and animals |

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|              | <p>that act between moving surfaces</p> <p>*recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p> | <p>*use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> | <p>liquid to form a solution, and describe how to recover a substance from a solution</p> <p>*use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>*give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>*demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>*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</p> |   |   |
| Big question | How do machines work?   | Why does the moon appear to change shape?   | What is a mixture and how do I separate it into parts?  | How do humans change as they get older? | How do living things make copies of themselves? |

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| Title              | Forces  | Earth and space   | Properties and changes in materials   | Living things   | Evolution and inheritance  |
| Local links        | Locomotion Museum Shildon   |   |   | Washington Wetlands   | School nurse (puberty talk)  |
| Hook               | 2019: Bridges and balances activity at Hamsterley forest  |   |   | Live caterpillars in class to observe lifecycle in real time  |  |
| Post Learning Task |   |   |   | Attenborough style presentation/video explaining and comparing lifecycles   |  |
| <b>Year 6</b>      |   |   |   |   |  |
| Statutory Focus    | <p>*recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>*recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>*identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> | <p>*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</p> <p>*give reasons for classifying plants and animals based on specific characteristics</p> | <p>*associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>*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</p> <p>*use recognised symbols when representing a simple circuit in a diagram</p> | <p>*identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>*recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>*describe the ways in which nutrients and water are transported within animals, including humans</p> | <p>*recognise that light appears to travel in straight lines</p> <p>*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</p> <p>*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</p> <p>*use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> |

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| Big question       | What happens to species over a long time?                               | How are living things grouped together?  | How do humans use electricity?                                   | What affects the health of humans?                 | How does light travel?                           |
| Title              | Evolution and Inheritance   | Living Things  | Electricity  | Animals and humans                                 | Light  |
| Local Links        |   | Centre for life - Newcastle  | Shildon Railway Museum<br><br>Life centre – electricity workshop | Life Centre - Newcastle                            | Life centre – light workshop                     |
| Hook               | Digging up fossils in school grounds<br><br>Beach visit to find fossils | What am I game<br>What could it be? – pictures of bizarre creatures<br><br>Book: What on Earth?  | Wire a plug (connections and closing circuits)                   | Quiz – digestive, muscular and skeletal systems    | Shadow puppet activity in Art                    |
| Post Learning Task | Biography – Charles Darwin/Mary Anning<br><br>Quiz                      | Create a flow chart to classify a species<br><br>PP presentation<br><br>Non-chronological report |  | Written/recorded explanation of circulatory system | Video demonstrations of light/shadow and prisms. |