Blidworth & Rainworth Primary School Partnership
Science Subject Pathway 2025-2026

# SCIENCE

| Subject Rationale - Science |
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| Our Science curriculum strives to encourage children to become independent scientists who question and explore their own ideas, as well as those of others, and encompasses the acquisition of knowledge, concepts, skills and positive resilient attitudes. Wherever possible, we deliver lessons where children learn through varied systematic investigations; leading to them being equipped for life to ask and answer scientific questions about the world around them. Working Scientifically underpins all the subject specific knowledge and skills that are delivered within our curriculum, and it is built upon each year so that our children can apply their growing scientific understanding when they are using equipment, conducting experiments and investigations, building arguments, explaining concepts and using scientific terminology. |

| Long Term Overview - Science | | | | | | |
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| | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| IN EYFS, Science is woven in throughout the curriculum through the learning environment and opportunities for exploration. Children are given opportunities to answer their own enquiry questions and are encouraged to work things out through creating and thinking critically. They explore and investigate the world around them, developing their own ideas and making links. Throughout their time in the Foundation Stage, the level of questioning is aimed through an understanding of previous knowledge and building on this, as well as addressing misconceptions. | | | | | | |
| **EYFS** | Water/sand trays<br><br>Surrounding environment | Environmental changes – seasonal, Autumn<br><br>Bonfire night – rocket experiment<br><br>Autumn stay and play – bonfire, potion making | Environment – cold and warm countries – habitats<br><br>How to melt ice – observing how hot water melted the ice. | Changes in materials – exploring, enquiry, asking questions<br><br>Level of questioning to change across each phase F1/F2.<br><br>"I wonder…" | Animals and plants<br>Life cycles – caterpillar<br><br>Planting seeds<br><br>How to care for a plant | Working scientifically – animals/humans<br><br>Healthy eating<br>Germs and bacteria<br>Keeping clean and looking after their body<br><br>Brushing teeth |
| **Year 1** | Working Scientifically<br>Animals, including Humans (RSHE)<br>(Autumn) | Working Scientifically<br>Animals, including Humans | Working Scientifically<br>Animals, including Humans (Winter) | Working Scientifically<br>Everyday Materials | Working Scientifically<br>Everyday Materials (Spring) | Working Scientifically<br>Plants<br>(Summer) |
| **Year 2** | Working Scientifically<br>Living Things & Their Habitats | Working Scientifically<br>Classifying & Grouping Materials | Working Scientifically<br>Changing Materials | Working Scientifically<br>Animals including Humans (RSHE) | Working Scientifically<br>Plants | Working Scientifically<br>Living Things & Their Habitats |
| **Year 3** | Working Scientifically<br>Light | Working Scientifically<br>Animals including Humans | Working Scientifically<br>Animals including Humans (RSHE) | Working Scientifically<br>Rocks | Working Scientifically<br>Plants | Working Scientifically<br>Magnetic Forces |
| **Year 4** | Working Scientifically<br>States of Matter | Working Scientifically<br>Electricity | Working Scientifically<br>Sound | Working Scientifically<br>Sound | Working Scientifically<br>Living Things & Their Habitats (RSHE) | Working Scientifically<br>Animals including Humans |
| **Year 5** | Working Scientifically<br>Properties & Changes to Materials | Working Scientifically<br>Properties & Changes to Materials | Working Scientifically<br>Animals including Humans (RSHE) | Working Scientifically<br>Forces | Working Scientifically<br>Earth & Space | Working Scientifically<br>Living Things & Their Habitats |
| **Year 6** | Working Scientifically<br>Electricity | Working Scientifically<br>Animals including Humans (RSHE) | Working Scientifically<br>Living Things & Their Habitats | Working Scientifically<br>Evolution & Inheritance (RSHE) | Working Scientifically<br>Evolution & Inheritance | Working Scientifically<br>Light |

| Skills Progression Mapping – Science | | |
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| | **FS1** | **FS2** |
| **Working Scientifically Ask Questions** | • Listen and begin to respond to adult led simple questions, making statements in response. | • Listen and respond to adult led questions, beginning constructing relevant simple questions. |
| **Working Scientifically Plan /Predict** | • Explore with curiosity in the environment, adult support to make changes/test ideas. | • Make statements independently and begin to say what might happen.<br>• Begin to perform simple tests/explorations. |
| **Working Scientifically Observe/Measure** | • Make statements about what I can see/hear/smell/touch.<br>• Experience objects/equipment through use in the environment. | • Observe a group of objects.<br>• Begin to use non-standard equipment |
| **Working Scientifically Record** | • Offer information to support the adult recording. | • With adult guidance record finding using tangible objects such as sorting hoops. |
| **Working Scientifically Interpret / Report** | • Make judgements based on my thoughts and feelings. | • Verbally explain my ideas using my understanding of the test/exploration. |
| **Working Scientifically Evaluate** | • Give my opinion on exploration of my environment. | • Respond to simple adult questions, using exploration to suggest responses. |

| Skills Progression Mapping – Science | | | | | | |
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| | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Working Scientifically Ask Questions** | • Ask simple questions | • Ask simple questions and recognise that they can be answered in different ways. | • Ask relevant questions when prompted and use a form of scientific enquiry to answer them | • Ask relevant questions and use different types of scientific enquiry to answer them | • Plan different types of scientific enquiry to answer a question. | • Plan different types of scientific enquiry to answer my own or others questions. |
| **Working Scientifically Plan /Predict** | • Perform simple tests.<br>• Begin to say what might happen. | • Perform simple comparative tests<br>• Make a sensible prediction. | • Perform simple practical enquiries, comparative and fair tests<br>• Make a prediction and give a possible reason | • Set up simple practical enquiries, comparative and fair tests with more than one variable.<br>• Make a prediction giving reasons | • Set up an investigation, recognising the variables and isolate each one.<br>• Make a prediction based on scientific knowledge. | • Recognise which type of investigation is needed to suit a particular enquiry<br>• Make a prediction based on findings from previous investigations. |
| **Working Scientifically Observe/Measure** | • Observe a range of objects.<br>• Use simple non-standard equipment. | • Observe something closely and describe changes over time.<br>• Use simple equipment using standard measure. | • Make decisions about what to observe.<br>• Make accurate measurements using standard units. | • Make systematic and careful observations.<br>• Use a wider range of equipment independently including data loggers and thermometers. | • Carry out repeat observations to ensure accuracy.<br>• Use a range of equipment with increasing accuracy and independence. | • Make my own decisions about which observations to make using previous results to make further predictions and set up further tests<br>• Choose the most appropriate equipment in order to take measurements. |

| Skills Progression Mapping – Science | | | | | | |
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| | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Working Scientifically Record** | • Gather and record simple data.<br>• Demonstrate data in;<br>- Table<br>- Diagram<br>- Tally (tick only)<br>- Sorting circles | • Gather and record data to answer questions using standard units. secondary sources<br>• Demonstrate data in;<br>- Table<br>- Diagram<br>- Tally<br>- Venn diagram<br>Block graph | • Gather, record, classify and present data in a variety of ways (including secondary sources)<br>• Demonstrate data in;<br>- Table<br>- Labelled Diagram<br>- Venn diagram<br>- Bar chart | • Gather, record, classify and present data in a way considered to be most appropriate.<br>• Demonstrate data in;<br>- Table<br>- Labelled Diagram<br>- Bar chart<br>- Line graph<br>- Classification Key | • Record data and results of increasing complexity.<br>• Demonstrate data in;<br>- Table<br>- Labelled Diagram<br>- ~~Pie chart~~<br>- Line graph<br>Scatter graph | • Record data and results of increasing complexity, choosing the most effective approach to record and report results.<br>• Demonstrate data in;<br>- Table<br>- Labelled Diagram<br>- Line graph<br>- Scatter graph<br>- Classification Key |
| **Working Scientifically Interpret / Report** | • Make a simple explanation about what has been found out. | • Communicate processes, ideas and findings in different ways. | • Report on findings from enquiries including oral and written explanations, presenting results and conclusions. | • Report on findings from enquiries including oral and written explanations, presenting results and conclusions in greater depth. | • Consider an audience when reporting on findings from enquiries of increasing complexity including degree of trust. | • Choose the most appropriate method of reporting findings from enquiries including conclusions, explanations of the degree of trust and causal relationships. |
| **Working Scientifically Evaluate** | • Use results to suggest answers to questions. | • Use results to suggest answers to questions noticing similarities, differences and patterns. | • Use results to draw simple conclusions and make predictions for new values and suggest improvements. | • Use results to draw conclusions, make further predictions and improvements and raise further questions. | • Use results to draw evaluative conclusions recognising fact from opinion. | • Use results to draw evaluative conclusions relating this to other enquiries. |

| Skills Progression Mapping – Science | | |
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| | **FS1** | **FS2** |

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| **Animals including Humans** | • Identify and name some simple body parts.<br>• Use my senses to explore.<br>• Identify animals through exploration of my environment.<br>• Identify animals linked to the seasons and my natural environment.<br>• Taste healthy foods and explore our likes and dislikes in cooking/baking experiences.<br>• Listen to an adult talk about 'healthy' and 'unhealthy' foods during practical experiences. | • Identify and name simple body parts.<br>• Understand the parts of the body make up our skeleton.<br>• Begin to make links between body parts and our senses.<br>• Identify animals through exploration of my environment making links to winter animals, African animals etc.<br>• Use my natural environment to explore living animals and their habitats, for example butterflies.<br>• Taste and explore healthy foods and discuss how it makes us feel.<br>• Give opinions of 'healthy' and 'unhealthy' foods and my likes and dislikes.<br>• Understand that washing hands washes germs away. |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Animals, including Humans** | • Name at least 12 parts of the human body.<br>• Know which body part is related to which sense.<br>• Identify a range of domestic and wild animals.<br>• Describe the difference in structure of a variety of animals.<br>• Classify animals in different ways.<br>• Say whether something is living or non-living.<br>• Name a variety of domestic and wild animals.<br>• Describe how animals are suited to a particular environment.<br>• Group/ classify animals in a variety of ways.<br>• Name some foods which help me to stay healthy.<br>• Name some foods which are unhealthy if eaten often.<br>• State how germs are spread and ways to stay clean.<br>• Explain how to use medicines safely. | • Explain why animals, including humans, grow and reproduce.<br>• Describe the life cycles of living things.<br>• Explain the basic needs of animals, including humans, for survival<br>• Know what is required to stay healthy.<br>• Understand when permission is needed.<br>• Ask the right people for help.<br>• Know when to ask for help. | • Describe how animals obtain nutrients from what they eat.<br>• Describe how joints help animals to move.<br>• Explain the importance of a skeletal system.<br>• State reasons why a balanced diet is important.<br>• Use the scientific name for private body parts.<br>• State several ways to stay healthy in the sun.<br>• Name several nutrients found in food.<br>• Describe how a persons body might be affected when using legal substances.<br>• State the difference between a secret and a surprise.<br>• State several ways to ensure I am safe near roads/ traffic.<br>• Describe how to remain safe when near open water.<br>• Describe the actions to take if someone is in danger in open water. | • Understand reasons for good oral hygiene.<br>• Identify functions of different types of teeth.<br>• Compare teeth from a herbivore and carnivore.<br>• Identify and name the basic parts of the digestive system in humans.<br>• Describe the function of the basic parts of the digestive system in humans.<br>• Explain what a simple food chain shows.<br>• Construct a variety of food chains.<br>• Identify producers, consumers, predators and prey.<br>• Name and locate reproductive body parts.<br>• Explain what puberty is.<br>• State what a personal boundary is.<br>• Explain how to respond if personal boundaries are crossed. | • Describe the changes seen in humans from birth to old age.<br>• Know the changes occurring in puberty.<br>• Know the name and function of the parts of the male reproductive system.<br>• Know the name and function of the parts of the female reproductive system.<br>• State reasons why sleep is important to maintain a healthy body.<br>• State different ways to keep myself safe in a variety of situations.- Internet and personal space | • Describe the function of the heart.<br>• State how nutrients are transported around the body.<br>• Suggest several ways to keep your heart healthy.<br>• Explain the effect that exercise has on the heart.<br>• Describe the changes in boys and girls at puberty.<br>• Describe what happens at conception.<br>• State some changes occurring during pregnancy. |

| Skills Progression Mapping – Science | | | | | | |
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| | FS1 | | | FS2 | | |
| **Plants** | • Explore plants in the environment.<br>• Identify some similarities and differences in our natural environment.<br>• Use my senses to explore plants/trees/things that grow.<br>• Plant seeds and observe growth over time. | | | • Explore plants and make statements. I can begin to ask simple questions.<br>• Discuss similarities and differences in our natural environment.<br>• Use my senses to explore and explain what I observe in our natural environment.<br>• Plant seeds, observe growth and changes over time. I can make verbal judgements based on my observations. | | |
| | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Plants** | • Ask some questions about plants.<br>• Name a range of common trees and their parts.<br>• Recognise deciduous and evergreen trees.<br>• Name a range of common plants and their parts. | • State what plants need to survive.<br>• Describe how seeds and bulbs grow. | • State what is required to produce a healthy plant.<br>• Know that a plants requirements vary depending on the species.<br>• Name and describe the function of parts of a flowering plant.<br>• Explain how liquid is transported in plants.<br>• Describe the pollination process.<br>• Explain how seeds are formed..<br>• Explain different forms of seed dispersal. | | | |

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| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Living Things & their Habitats** | | • State how I know that something is living or dead.<br>• State how I know that something has never been alive.<br>• Name at least 4 life processes.<br>• Describe how a micro habitat provides for the needs of an animal.<br>• Describe how a micro habitat provides for the needs of a plant.<br>• Describe a familiar habitat.<br>• Describe an unfamiliar habitat.<br>• Describe how a habitat provides for a living thing.<br>• Describe features of animals.<br>• Describe how plants and animals are suited to their habitat. | | • Describe how living things may be classified in a variety of ways.<br>• Identify several similarities and differences between land and sea animals..<br>• Describe how a changing environment may affect a variety of living things. | • Explore the work of a well-known naturalist.<br>• Describe sexual reproduction in plants.<br>• Describe asexual reproduction in plants.<br>• Describe insect life cycles.<br>• Describe amphibian life cycles.<br>• Describe bird life cycles.<br>• Describe mammal life cycles.<br>• Compare life cycles of living things. | • Group animals into reptiles, mammals, amphibians, birds and fish.<br>• State the significance of the work of Carl Linnaeus.<br>• Classify animals using a classification key.<br>• Classify plants using a classification key. |
| **Sound** | | | | • Identify different sources of sound.<br>• Compare sources of sound and describe the differences.<br>• Describe how sound travels to the ear.<br>• Describe the pattern between volume and vibration.<br>• Explore how the ear hears pitch.<br>• Find patterns between the pitch and the object that created the sound.<br>• Explain how to change the pitch of a sound. | | |

## Skills Progression Mapping – Science

| | FS1 | FS2 |
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| **Materials** | • Explore materials using my senses.<br>• Explore and give statements about the texture of different materials.<br>• Listen to statements about different materials in my environment.<br>• Explore the properties of different materials in my environment. | • Begin to describe materials using my senses.<br>• Begin to name and identify everyday materials in my environment.<br>• Begin to understand the difference between the object and the material it is made from.<br>• Explore and begin to discuss the properties of different materials in my environment. |

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Materials / Rocks / States of Matter** | • Describe materials using my senses.<br>• Describe materials using scientific words.<br>• Name and identify everyday materials.<br>• Distinguish between an object and the material it's made from.<br>• Sort objects according to their materials.<br>• Sort objects according to the properties of their materials.<br>• Sort materials by comparing their absorbency.<br>• Sort objects into transparent and opaque. | • Describe the physical properties of a range of materials.<br>• Sort materials according to some physical properties.<br>• State what a man-made material is.<br>• State what a natural material is.<br>• Suggest reasons why similar objects are made from different materials.<br>• Describe various ways to change a solid shape.<br>• State different uses for a range of materials.<br>• Say which material would be most suitable for a given purpose.<br>• Explain how objects move on different surfaces. | • Compare different rocks.<br>• Group different rocks.<br>• Describe different types of rock and how they are formed.<br>• Describe the uses of different rocks.<br>• Describe how fossils are formed.<br>• Recognise what soil is made from. | • State some properties of a solid.<br>• State some properties of a liquid.<br>• State some properties of a gas.<br>• Describe what happens to some materials when heated or cooled.<br>• Use a thermometer correctly.<br>• Describe the part evaporation plays in the water cycle.<br>• Describe the part condensation plays in the water cycle. | • Order materials based on their hardness.<br>• Order materials based on their transparency.<br>• Sort materials based on their electrical conductivity<br>• Identify the thermal conductivity of a range of materials.<br>• Give reasons for the particular use of a material.<br>• Explain what dissolving means and give examples.<br>• Explain the terms filtering and sieving.<br>• Identify whether to use sieving, filtering or dissolving as a means of separation.<br>• Give examples of some reversible changes.<br>• Give examples of some irreversible changes. | |

Skills Progression Mapping – Science

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Forces** | | | • Know magnets have two poles.<br>• Observe how magnets react to each other.<br>• Identify and classify magnetic materials.<br>• Observe magnetic forces acting at a distance. | | • Explain how gravity works.<br>• Explore the work of scientists who developed the theory of gravitation.<br>• Identify the effects of air resistance.<br>• Identify the effects of water resistance.<br>• Identify the effects of friction between moving surfaces.<br>• Explain how different mechanisms work.<br>• Recognise mechanisms allow a small force to have greater effect. | |
| **Light** | | | • Know that light is needed to see.<br>• Know that darkness is the absence of light.<br>• Name several light sources.<br>• Understand that light can be reflected.<br>• Explain how a shadow is formed.<br>• Demonstrate how shadows change in relation to the distance of a light source.<br>• State how light from the sun can be dangerous. | | | • Explain that light travels in straight lines.<br>• Explain how objects are seen by the eye.<br>• Use a periscope to show light travels in straight lines.<br>• Explore ways to test an idea about light.<br>• Choose the best way to investigate an idea about light. |
| **Electricity** | | | | • Give examples of mains/battery powered appliances.<br>• Construct a simple circuit.<br>• Correctly state whether or not a bulb will light up.<br>• Explain the function of a switch in a circuit.<br>• Explain what a conductor is.<br>• Explain what an insulator is. | | • Name the basic parts of a simple electric series circuit.<br>• Draw a series circuit using recognised symbols.<br>• State how simple components work within a series circuit.<br>• Make changes in a circuit and explain the impact.<br>• State some of the dangers of electricity. |

| Skills Progression Mapping – Science | | | | | | |
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| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |

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| **Earth & Space** | | | | | • Describe the shape of the moon, earth and other planets using correct vocabulary.<br>• Explain how day and night occurs.<br>• Explain the apparent movement of the sun.<br>• Describe the movement of the moon relative to earth.<br>• Explain the movement of planets in relation to the sun. | |
| **Evolution & Inheritance** | | | | | | • Understand how to keep safe.<br>• Understand different types of relationships.<br>• Fossils are living things that lived millions of years ago.<br>• Recognise that fossils provide information about things that lived a long time ago.<br>• Know the impact Mary Anning had on Science.<br>• Explain the process of evolution.<br>• Identify how plants have adapted to suit their environment.<br>• State several ways in which animals have evolved.<br>• State several ways in which humans have adapted to suit their environment.<br>• State the advantages of given adaptations.<br>• Describe how offspring may be similar to their parents.<br>• Understand why offspring are not identical to their parents. |

| **Vocabulary Progression Mapping – Science** |
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| **Science- Foundation** |

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| face, eyes, nose, ears, mouth, chin, hair, body, grow, bones, look, see, feel, find, watch, change, time (year) month, animal, pet, zoo, medicine, dangerous, ill, poorly, clean, dirty, sugar, vegetables, same, different, match, sort, catch, hunt, dead, alive, meat, plants, grass, home, tree, nest, dark, light, soft, hard, smooth, rough, sound, touch, hear, smell, taste, weather, hot, cold, freezing, boiling, sink, float, soak, seed, soil, pot, water, flower, bud, food, plant, leaves, push, pull, planet, moon, sun, earth, drop, big, little | | | | | |
| **Science - Year 1 – Unit 1** Humans / Autumn | | | | | |
| human<br>facial features | magnifying glass<br>detailed | senses<br>locate | sight<br>touch | observe<br>communicate | seasons<br>Autumn |
| **Science - Year 1 – Unit 2** Animals | | | | | |
| healthy/Unhealthy<br>variety | bacteria<br>germs | medication<br>harmful | domestic<br>wild<br>mammal | animal<br>species<br>structure | Winter<br>temperature |
| **Science - Year 1 – Unit 3** Animals / Winter | | | | | |
| Features<br>similar | living<br>non-living | carnivores<br>herbivores<br>omnivores | environment<br>suited | sort<br>criteria | Winter<br>temperature |
| **Science - Year 1 – Unit 4** Everyday Materials | | | | | |
| SCIENCE WEEK FOCUS | texture<br>everyday materials | distinguish<br>object | explain<br>group | properties<br>difference | Variables<br>waterproof |
| **Science - Year 1 – Unit 5** Everyday Materials | | | | | |
| Spring<br>daylight | accurately<br>forecast | Stretchy<br>stiff | transparent<br>opaque | absorbent<br>non-absorbent | label<br>caption |
| **Science - Year 1 – Unit 6** Plants | | | | | |
| experiment<br>question | stem<br>petal | root<br>trunk | deciduous<br>evergreen | signs<br>precipitation | standard units<br>measurement |
| **Science - Year 2 – Unit 1** Living Things & Their Habitats | | | | | |
| thriving<br>never lived | life processes<br>respiration<br>excretion | research<br>habitat | supports<br>provide | observation<br>changes over time | present<br>data |
| **Science - Year 2 – Unit 2** Classifying & Grouping Materials | | | | | |
| physical properties<br>rank | classify<br>suitability | natural<br>manufactured | function<br>qualities | predict<br>fair test | diagram<br>findings |

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| **Vocabulary Progression Mapping – Science** |
| **Science - Year 2 – Unit 3** Changing Materials |

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| solid<br>pound | rigid<br>flexible | scientist<br>McAdam / Mackintosh | surface<br>investigation | chart<br>equipment | examine<br>evidence |
| **Science - Year 2 – Unit 4** Animals including Humans | | | | | |
| SCIENCE WEEK FOCUS | permission<br>choice | mentally<br>physically | diet<br>hygiene | lifecycle | survival<br>needs |
| **Science - Year 2 – Unit 5** Plants | | | | | |
| requirements<br>light | germination<br>seedling | healthy (plant)<br>warmth | communicate<br>record | expected<br>unexpected | associate<br>mature |
| **Science - Year 2 – Unit 6** Living Things & Their Habitats | | | | | |
| familiar<br>countryside | alternative<br>impact | polar desert<br>unfamiliar | arctic<br>camouflage | sand desert<br>drought | humid<br>arid |
| **Science - Year 3 – Unit 1** Light | | | | | |
| absence of light<br>visible | light sources<br>natural<br>artificial | surface<br>reflected | opaque<br>shadow | silhouette<br>position | variable<br>comparison |
| **Science - Year 3 – Unit 2** Animals including Humans | | | | | |
| nutrition<br>nutrient | carbohydrates<br>protein | nutritional value<br>energy | invertebrates<br>vertebrates<br>internal | contract<br>reflex | outcome<br>analyse |
| **Science - Year 3 – Unit 3** Animals including Humans | | | | | |
| private<br>specific | protect<br>UV radiation | legal<br>substances | secret<br>surprise | Green Cross Code<br>risk | open water<br>fatal |
| **Science - Year 3 – Unit 4** Rocks | | | | | |
| SCIENCE WEEK FOCUS | appearance<br>petrologist | sedimentary<br>igneous<br>metamorphic | fossil<br>palaeontology | content<br>organic matter | permeability |
| **Science - Year 3 – Unit 5** Plants | | | | | |
| vital<br>requirements | vary<br>plant species | factors<br>transportation | transpiration<br>xylem | carpel<br>stamen | seed dispersal<br>pollination |
| **Science - Year 3 – Unit 6** Magnetic Forces | | | | | |
| repel<br>attract | magnetic force<br>iron | contact force<br>non-contact force | justify<br>enquiry | evaluate | |

| **Vocabulary Progression Mapping – Science** |
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| **Science - Year 4 – Unit 1** States of Matter |

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| state<br>particle | Celsius<br>boiling – freezing –<br>melting point | solidify<br>systematic | evaporation<br>condensation | water vapour<br>precipitation | conclusion<br>anomaly |
| **Science - Year 4 – Unit 2** Electricity | | | | | |
| appliance<br>safety feature | component<br>circuit | series circuit<br>flow of energy | conductor<br>insulator | current<br>open/closed switch | conductivity |
| **Science - Year 4 – Unit 3** Sound | | | | | |
| sound source<br>origin | vibrate<br>vibration | amplification<br>faint | Muffled<br>fainter | data-logger<br>isolate | key findings |
| **Science - Year 4 – Unit 4** Sound | | | | | |
| SCIENCE WEEK FOCUS | pitch<br>cochlea | range<br>audio | transmit<br>frequency | patterns | absorb |
| **Science - Year 4 – Unit 5** Living Things & Their Habitats | | | | | |
| penis<br>vagina | puberty<br>perspiration | privacy<br>boundaries | subgroup<br>amphibian | positive impact<br>negative impact | positive impact<br>negative impact |
| **Science - Year 4 – Unit 6** Animals including Humans | | | | | |
| oral<br>enamel | Nutritional value | Oral hygiene | molar – incisor - canine | Saliva -<br>oesophagus -<br>digestion - intestines | producer – consumer<br>predator – prey<br>energy transferral |
| **Science - Year 5 – Unit 1** Properties & Changes to Materials | | | | | |
| translucent<br>diffuse | electrical conductivity | thermal conductivity<br>heat transfer | degree of trust<br>confidence | thermal insulator | chemist<br>Baekeland / Benedictus |
| **Science - Year 5 – Unit 2** Properties & Changes to Materials | | | | | |
| soluble – insoluble -<br>dissolve – solution | solute – solubility | reversible | irreversible<br>substance | filtrate<br>residue | rust |
| **Science - Year 5 – Unit 3** Animals including Humans | | | | | |
| infancy<br>adolescent | hormones<br>testosterone | testes<br>sperm | ovaries<br>uterus | sleep pattern | appropriate/<br>inappropriate pressure |
| **Science - Year 5 – Unit 4** Forces | | | | | |
| SCIENCE WEEK FOCUS | gravity<br>gravitational pull<br>mass | air resistance<br>force | water resistance<br>up thrust | friction | mechanisms |

| **Vocabulary Progression Mapping – Science** |
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| **Science - Year 5 – Unit 5** Earth & Space |

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| TRIP TO SPACE CENTRE | orbit<br>rotational | lunar eclipse<br>phases | solar system<br>celestial body | astronomy – atmosphere – hemisphere – galaxy<br>Ptolemy - Copernicus | |
| **Science - Year 5 – Unit 6** Living Things & Their Habitats | | | | | |
| naturalist / behaviourist<br>Attenborough / Goodall | anther / filament<br>stigma /style | asexual<br>spores<br>tubers | metamorphosis<br>larva | hatchling<br>viviparous<br>oviparous | comparative |
| **Science - Year 6 – Unit 1** Electricity | | | | | |
| schematic drawing | voltage<br>faults | positive / negative<br>terminal | watts<br>amps<br>volts | causal relationship<br>resistance | electrocute<br>short circuit |
| **Science - Year 6 – Unit 2** Animals including Humans | | | | | |
| circulatory system<br>artery<br>vein | capillaries | contractions<br>pulse metre | valves<br>carcinogenic | mood swing<br>pubescent | conception<br>gestation |
| **Science - Year 6 – Unit 3** Living Things & Their Habitats | | | | | |
| characteristics | classification<br>species<br>Carl Linnaeus | classification key<br>taxonomy | attribute | botany | formulate<br>classification system |
| **Science - Year 6 – Unit 4** Evolution & Inheritance | | | | | |
| SCIENCE WEEK FOCUS | peer pressure<br>exploitation | Healthy/unhealthy<br>relationships | organism<br>fossilised | palaeontologist<br>evolution<br>Mary Anning | evolutionary change<br>dehydration |
| **Science - Year 6 – Unit 5** Evolution & Inheritance | | | | | |
| ancestor<br>evolve | theorist<br>natural selection<br>Charles Darwin | inheritance<br>environmental variation | inherited<br>offspring<br>identical | genes | evidence<br>inherited traits<br>required traits |
| **Science - Year 6 – Unit 6** Light | | | | | |
| optic nerve<br>reflect | periscope<br>light rays | spectrum<br>phenomena | viable | constant variable | consensus<br>reproducibility |

| **Learning Overview - Science Year 1** | | | | | |
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| **Unit 1 – Theme(s) Animals, including Humans & Autumn** | | | | | |
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| L.O. To identify / name the main parts of the human body. | L.O. To draw basic parts of the human body. | L.O. To know which body part is related to which sense *(smell/ taste)*. | L.O. To know which body part is related to which sense *(sight/hearing/ touch)*. | L.O. To perform a simple test relating to the senses. | L.O. To observe change across the four seasons and the associated weather. |
| Identify arms, legs, head and body.<br>Identify hands, feet, fingers, toes and facial features.<br>Identify shoulders, chest, waist, ankles, wrist and knees<br>Name some internal body parts. | Draw a human to include arms, legs, head and body.<br>Draw a human to also include fingers and feet.<br>Label the human body accurately.<br>Ask questions relating to the human body. | Name and locate nose and mouth.<br>Name the senses relating to our nose and mouth.<br>Explore how the senses are used in everyday life.<br>Recognise how these senses are used in different situations. | Name and locate eyes, ears and hands.<br>Name the senses relating to our eyes, ears and hands.<br>Explore how the senses are used in everyday life.<br>Recognise how these senses are used in different situations. | Observe how to perform a simple test.<br>Carry out a simple test carefully.<br>Communicate how the test was performed.<br>Explain the results of the test. | Name two different weather types.<br>Know that Autumn is one of the four seasons.<br>Describe signs of Autumn and the weather associated with this season.<br>Describe how the day length varies linked to the seasons. |
| human<br>facial features | magnifying glass<br>detailed | senses<br>locate | sight<br>touch | observe<br>communicate | seasons<br>Autumn |
| | | | | | *Children should explore the **same route** around school to notice changes – take photos for the classroom to compare each term. |

| Learning Overview - Science Year 1 | | | | | |
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| **Unit 2 – Theme(s) Animals, including Humans** | | | | | |
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| L.O. To know and understand about healthy eating. | L.O. To know and explain ways to be clean and healthy. | L.O. To learn about the effects of medicine. | L.O. To identify and name a variety of common animals. | L.O. To compare the structure of common animals. | L.O. To observe change across the four seasons and the associated weather. |
|---|---|---|---|---|---|
| Recognise that foods we eat can help to keep humans healthy.<br>Identify healthy /unhealthy foods.<br>Give reasons why foods are healthy or unhealthy.<br>Understand why humans need a variety of healthy foods. | State one way to keep themselves clean.<br>Know that germs and bacteria can be harmful.<br>Give different examples of how to stay clean and healthy.<br>Describe how germs may affect our bodies. | Give reasons why people take medicines.<br>Know why there are rules about taking medicines.<br>Know why medicines can be harmful.<br>Identify other substances in the house that may be harmful. | Name some domestic animals.<br>Recognise a range of farm animals.<br>Identify a variety of animals from different species.<br>Sort animals by species such as reptile / amphibian etc | Name different parts of some animals.<br>Describe the structure of 2 different species.<br>Compare the structure of 2 animals.<br>State how they use their different features. | Observe and record the weather<br>Know that winter is one of the four seasons and record the temperature.<br>Record signs of winter and compare to autumn.<br>Describe how the length of daylight has changed. |
| healthy/unhealthy<br>variety | bacteria<br>germs | medication<br>harmful | domestic<br>wild mammal | animal species<br>structure | Winter<br>temperature |
| | | | including fish, amphibians, reptiles, birds and mammals | fish, amphibians, reptiles, birds and mammals including pets | |

| Learning Overview - Science Year 1 | | | | | |
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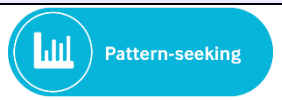
| Unit 3 – Theme(s) Animals, including Humans | | | | | |
|  |  |  |  |  |  |

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| L.O. To group animals according to their features. | L.O. To sort living and non-living things. | L.O. To identify and name a variety of animals which are carnivores, herbivores and omnivores. | L.O. To describe how animals are suited to different environments. *(land/sea animals)*<br><br>*To describe how features of animal groups are different.* | L.O. To sort animals by a number of given criteria. | L.O. To observe change across the four seasons and the associated weather. |
| Name the different features in a range of animals.<br>Sort animals according to specific features.<br>Give reasons for how an animal has been sorted.<br>Use a key to sort some animals according to some similar features. | Explore a range of living and non-living things.<br>Sort living and non -living things correctly.<br>Explain reasons for why things belong in each group.<br>Identify further objects which could be placed in each group. | Explore a range of animals and what they eat.<br>Recognise that some animals only eat certain foods.<br>Identify animals as being carnivores, herbivores and omnivores.<br>Identify physical features of animals which match their diet. | Explore a variety of land and sea animals<br>Identify features of animals that live in land/ in the sea.<br>Communicate how animals are suited to living on the land/ in the sea.<br>Identify further features of animals that live in land/ in the sea. | Listen carefully to given criteria.<br>Chose animals that match a given criteria.<br>Recognise key similarities/differences between animals within a given criteria.<br>Create own criteria to sort animals. | Observe and record the weather<br>Know that winter is one of the four seasons and record the temperature.<br>Record signs of winter and compare to autumn.<br>Describe how the length of daylight has changed. |
| features<br>similar | living<br>non-living | carnivores<br>herbivores<br>omnivores | environment<br>suited | sort<br>criteria | Winter<br>temperature |
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| **Learning Overview - Science Year 1** | | | | | |
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| **Unit 4 – Theme(s) Materials** | | | | | |
| | Identifying, grouping and classifying | Identifying, grouping and classifying | Identifying, grouping and classifying | Identifying, grouping and classifying | Comparative/ fair testing |

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| | LO: To describe, identify and name everyday materials. (raw materials) | LO: To distinguish between an object and the material it is made from. *(Use objects made from different materials)* | LO: To sort objects according to their material. | LO: To sort objects according to properties of materials. | LO: To test materials. |
| ONE LESSON IN THIS UNIT WILL BE LINKED TO THE SCIENCE WEEK FOCUS. | [ ]Explore/understand there are different materials.<br>[ ] Identify some every day materials they know and describe these using senses.<br>[ ] Correctly name different types of materials.<br>[ ] Compare properties to those of other materials. | [ ] Identify range of objects.<br>[ ] Identify range of materials.<br>[ ] Distinguish between objects and their materials.<br>[ ] Suggest why an object is made from a particular material. | [ ] Identify similarities between materials.<br>[ ] Sort objects into different groups.<br>[ ] Explain how objects have been sorted by materials.<br>[ ] Suggest ways to sort an object made from more than one material. | [ ] Identify similarities between properties of different materials.<br>[ ] Sort information into a table.<br>[ ] Explain how objects have been sorted by their properties.<br>[ ] Explain which objects were difficult to sort and why. | [ ] Identify the question you will be investigating.<br>[ ] Identify what will change/stay the same in the investigation.<br>[ ] Explain findings. ,<br>[ ] How would you improve this investigation? |
| | texture<br>everyday materials | distinguish<br>object | explain<br>group | properties<br>difference | variables<br>waterproof |
| | | Teacher prompt - Is there a pattern in the types of materials used to make objects in the classroom? – link to pattern seeking | | | Test different materials to see how much water they let through (and therefore identify waterproof and not waterproof materials) |

| Learning Overview - Science Year 1 | | | | | |
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| Unit 5 – Theme(s) Materials | | | | | |
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| L.O. To observe change across the four seasons and the associated weather. | L.O. To compare the seasons. *(Autumn, Winter and Spring)* | L.O. To answer scientific questions. *(Stretchy/stiff)* | L.O. To answer scientific questions. *(Transparent/ Opaque)* | L.O. To identify and sort things that have been observed. *(Absorbency)* | L.O. To show work using pictures, labels and captions. |
| Observe and record the weather<br>Know that spring is one of the four seasons and record the temperature.<br>Identify signs of spring and record.<br>Describe how the length of daylight has changed. | Name and order the seasons.<br>Identify changes in the seasons, temperature, plant growth, changes in day length etc.<br>Describe the differences in the 3 seasons and record accurately.<br>Describe possible changes expected to see in the following season. | Explore a range of stretchy and stiff materials.<br>Know what stretchy and stiff means.<br>Sort objects which are stretchy and stiff correctly.<br>Suggest which material would be the best for making a gymnast's leotard and why. | Explore a range of transparent and opaque materials.<br>Know what transparent and opaque means.<br>Sort objects which are transparent and opaque correctly.<br>Suggest which material would be the best for making curtains and why. | Describe what is meant by the term absorbent.<br>Carry out an investigation to test absorbency.<br>Explain your findings about absorbent and non-absorbent materials.<br>Rank materials from most to least absorbent. | Display work using pictures or photographs.<br>Recognise how annotating work using labels provides more information.<br>Use multiple ways to communicate your findings.<br>Suggest further ways to communicate your ideas. |
| Spring<br>daylight | accurately<br>forecast | stretchy<br>stiff | transparent<br>opaque | absorbent<br>non-absorbent | label<br>caption |
| | | What is the best material for a gymnast's leotard? | What is the best material for curtains? | | |

| Learning Overview - Science Year 1 | | | | | |
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| Unit 6 – Theme(s) Plants | | | | | |
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| LO: To think of some questions to ask about plants.<br>*(Bean Experiment)* | LO: To name a range of common plants and their parts.<br>*(petals, stem, leaf, flower, and root)* | LO: To name a range of common trees and their parts.<br>*(trunk, branches, and roots)* | LO: To recognise and describe deciduous and evergreen trees. | LO: To observe changes across the four seasons. | LO: To record findings using standard units.<br>(Bean Experiment) |
| [ ] Share knowledge of plants.<br>[ ] Think of questions to ask about plants.<br>[ ] Choose a suitable enquiry question.<br>[ ] Suggest ways to answer the question. | [ ] Know plants can be flowering and non-flowering.<br>[ ] Name parts of a plant.<br>[ ] Name a range of common plants.<br>[ ] Recognise that some parts of plants provide food. | [ ] Know a tree is a plant.<br>[ ] Name parts of a tree.<br>[ ] Name a range of common trees.<br>[ ] Recognise some trees provide food. | [ ] Identify the differences between deciduous and evergreen trees.<br>[ ] Describe differences.<br>[ ] Recognise deciduous and evergreen trees.<br>[ ] Link the life cycle of deciduous trees with the seasons. | [ ] Observe and record the weather<br>[ ] Know that summer is one of the four seasons and record the temperature.<br>[ ] Identify signs of summer and record.<br>[ ] Describe how the length of daylight has changed. | [ ] Explore measuring equipment with standard units.<br>[ ] Measure using standard units.<br>[ ] Record findings.<br>[ ] Record accurate measurements of results. |
| experiment<br>question | stem<br>petal | root<br>trunk | deciduous<br>evergreen | signs<br>precipitation | standard units<br>measurement |
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| Learning Overview - Science Year 2 | | | | | |
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| **Unit 1 – Theme(s) Living Things & Their Habitats** | | | | | |
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| L.O. To know some of the life processes common to all living things. | L. O. To know whether something is living, dead or has never been alive. | L.O. To research animals within a microhabitat. | To research plants within a habitat. | To carry out an observation to observe changes over time. *(leaf from plant)* | To record and present data. |
| State at least 1 life processes common to all living things.<br>State at least 3 life processes common to all living things.<br>State at least 5 life processes common to all living things.<br>State all processes common to all living things. | State whether something is living or non-living.<br>Give at least one reason why something is living, non-living or never lived.<br>Explain, giving more reasons, why something is living, non-living or never lived.<br>Produce a simple criterion for something that is living, non-living or never lived. | Name some animals found in the habitat.<br>Describe some living processes within the animals.<br>Explain how the habitat supports the life processes.<br>Apply this knowledge to other animals. | Name some plants found in the habitat<br>Describe some living processes within the plants.<br>Explain how the habitat supports the life processes.<br>Describe how animals and plants support each other. | Make a simple observation of a change over time.<br>Describe in more detail changes over time<br>Explain why the changes observed over time occurred.<br>Suggest other observations to support the evidence. | Draw an observed change.<br>Draw observed changes over time.<br>Record observations and use them to answer a question.<br>Use scientific knowledge from previous experience to explain findings. |
| thriving<br>never lived | life processes<br>respiration<br>excretion | research<br>habitat | supports<br>provide | observation<br>changes over time | present<br>data |
| | | Simple food chains | | (investigation set up in week 1 and observed on a weekly basis) | |

| Learning Overview - Science Year 2 | | | | | |
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| Unit 2 – Theme(s) Classifying & Grouping Materials | | | | | |
| Identifying, grouping and classifying | Identifying, grouping and classifying | Identifying, grouping and classifying | Pattern-seeking | Comparative/ fair testing | Comparative/ fair testing |

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| L. O. To describe simple physical properties of materials.<br><br>Tally Chart – Walk around and look for materials with certain properties. | L.O. To classify materials based on their physical properties.<br><br>Venn Diagram | L.O. To know the difference between man-made and natural materials. | To compare the suitability of everyday materials to particular uses. | L.O. To carry out a simple comparative on materials.<br><br>*(not absorbency or transparency)* | L.O. To use text and diagrams to record findings. |
| Name several different materials.<br>Match some properties to different materials.<br>Identify and describe the physical properties of different materials.<br>Rank materials according to a given property. | Sort materials according to two given properties.<br>Sort and group materials according to own properties.<br>Classify materials according to multiple properties.<br>For a given object, identify what properties a suitable material needs to have. | Explore examples of man-made and natural materials.<br>Suggest what materials things are made from.<br>Give a definition of man-made and natural materials.<br>Explain how some objects can be both natural and man-made. | Explore range of similar objects made from different materials (cups).<br>Recognise different materials and features.<br>Compare function and suitability of different materials.<br>Rank objects according to own criteria. | Follow instructions to test the materials.<br>Identify what will be kept the same in the test.<br>Conduct test knowing what to keep the same, change and measure.<br>Predict effect of changing a different variable. | Show findings of test pictorially.<br>Use diagrams to explain results.<br>Add text to add detail to information found.<br>Consider how information gained would be useful to others. |
| physical properties<br>rank | classify<br>suitability | natural<br>manufactured | function<br>qualities | predict<br>fair test | diagram<br>findings |

| **Learning Overview - Science Year 2** | | | | | |
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| **Unit 3 – Theme(s) Materials** | | | | | |
| Identifying, grouping and classifying | Identifying, grouping and classifying | Research | Comparative/ fair testing | Comparative/ fair testing | Pattern-seeking |
| L.O. To understand ways in which a solid object can be changed. | L.O. To identify different uses of a variety of materials. *(plastic)* | L.O. To find out about scientists who have developed new materials. | L.O. To suggest how to find out about the | L.O. To measure using simple equipment and record in a chart/ table. | L.O. To explore how materials change and answer questions. |

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| | | | suitability of materials for a given purpose. | | |
| Explore changing the shape of solid objects<br>Describe the actions needed to change the shape of solid objects.<br>Use correct vocab to explain changes to solid shapes.<br>Identify similar properties of different materials. | Recognise the material an object is made from.<br>Understand how a material can be used in different ways<br>Identify ways in which materials are different depending on their uses.<br>Suggest ways in which an object from a different material might be preferable. | Ask relevant questions to find out information about a scientist.<br>Use information from books/ online to find answers to questions.<br>Communicate their findings about the scientists.<br>Describe the impact of their invention on life today. | Listen to the focus of the investigation.<br>Think of ways to find out an answer to a question.<br>Identify ways in which an investigation may be carried out.<br>Explain why it might not be fair to compare two things. | Practise using measuring equipment.<br>Use measuring equipment accurately during the investigation<br>To record measurements carefully in a chart or table.<br>Provide accurate and clear measurements and recording in another form (graph) | |
| solid<br>pound | rigid<br>flexible | scientist<br>John McAdam<br>Charles Mackintosh | surface<br>investigation | chart<br>equipment | examine<br>evidence |
| | Use vocab words to create own Venn diagrams and sort images | | Woolly saucepan by Michael Rosen | | Explore how materials change and answer questions, e.g. Do all stretchy materials stretch in the same way? Are all plastic objects bendy? |

| **Learning Overview - Science Year 2** |
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| **Unit 4 – Theme(s) Animals, including Humans** |

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| | LO: To understand when permission is needed. | LO: To know when, who and how to ask for help. | LO: To know what is required to stay healthy, including safe use of medicines. | LO: To describe life cycles of living things, including humans, and how they grow and reproduce. | LO: To explain basic needs of animals, including humans, for survival. |
| ONE LESSON IN THIS UNIT WILL BE LINKED TO THE SCIENCE WEEK FOCUS. | [ ] Understand you don't touch others without permission.<br>[ ] Understand if someone says 'no' their choice should be respected.<br>[ ] Know that private parts of the body should only be touched with permission.<br>[ ] Express how people feel when their choice is not respected. | [ ] Describe a time when you have asked for help in the past.<br>[ ] Identify different people you can talk to and how to ask them for help.<br>[ ] Recognise how your body reacts mentally and physically when it feels hurt or unsafe.<br>[ ] Consider when and why people may not ask for help | [ ] Consider what it means to be healthy.<br>[ ] Understand ways medicines can improve health.<br>[ ] Understand ways exercise, diet and hygiene can improve health.<br>[ ] Consider negative impact of medicines. | [ ] Know life cycles show how animals grow and reproduce.<br>[ ] Order life cycles of living things.<br>[ ] Explain why animals, including humans, need to grow and reproduce.<br>[ ] Explain similarities and differences for 2 given life cycles. | *Yorkshire Wildlife Park* |
| | permission<br>choice | mentally<br>physically | diet<br>hygiene | lifecycle | survival<br>needs |
| | | | RSHE AND SCIENCE CURRICULUM | | |

| **Learning Overview - Science Year 2** |
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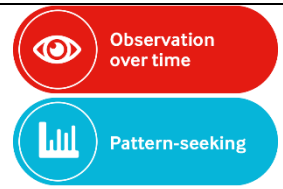
| **Unit 5 – Theme(s) Plants** |

|  |  |  |  |  |  |
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| L.O. To decide what plants need to survive. *(Experiment Task - water, light and warmth for seed or bulb)* | L.O. To observe and describe how seeds and bulbs grow. *(Observation Task)* | L.O. To find out how plants need water, light and warmth to grow and stay healthy. *(Experiment Task)* | L.O. To use text, diagrams and pictures/photos to record observations. *(Observation Task)* | L.O. To use scientific vocabulary to explain whether things happened as expected. *(Experiment Task)* | L.O. To make comparisons to find simple associations. (*Observation Task)* |
| Discuss what a plant needs to survive.<br>Identify key requirements for plant growth.<br>Explain why plants need water, light and warmth to survive.<br>Justify ranking the requirements in order of importance. | Observe the seeds and bulbs.<br>Identify any visible changes over the past week.<br>Describe the changes in the seed/ bulb.<br>Compare/ contrast the changes in seed and bulb growth. | Make suggestions about what would happen if plants didn't have water, light or warmth.<br>Describe changes that would be seen if a plant was not healthy.<br>Suggest ways to investigate a plant's needs.<br>Make a scientific prediction about what will happen next. | Notice any changes over time.<br>Communicate the changes over time.<br>Use text, diagrams and pictures to explain the changes.<br>Explain why it might not be fair to compare two things.<br><br>Block graph | Observe any differences in the plants.<br>Describe the changes in each plant.<br>Use scientific vocabulary to explain whether things happened as expected.<br>Compare the observed changes to our original prediction. | Observe further changes over time.<br>Identify similarities and differences between seed and bulb growth.<br>Use scientific vocab to record your findings.<br>Suggest further changes that you may expect to see. |
| requirements<br>light | germination<br>seedling | healthy (plant)<br>warmth | communicate<br>record | expected<br>unexpected | associate<br>mature |
| Cress seeds in different environments | | Cress seeds in different environments | Review lesson of observing changes over time (bulb) | | |

| **Learning Overview - Science Year 2** |
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| **Unit 6 – Theme(s) Living Things & Their Habitats** |

| Research | Research | Research | Research | Research | Research |
|---|---|---|---|---|---|
| LO: To describe a familiar habitat and how it provides for the living things within it. (*countryside*) | LO: To describe how plants and animals are suited to their habitat. (*countryside*) | LO: To describe an unfamiliar habitat and how it provides for the living things within it. (*polar desert)* | LO: To describe how plants and animals are suited to their habitat. (*polar desert*) | LO: To describe an unfamiliar habitat and how it provides for the living things within it. (*sand desert*) | LO: To describe how plants and animals are suited to their habitat. (*sand desert*) |
| [ ] Identify features of a habitat.<br>[ ] Identify plants and animals that live within the habitat.<br>[ ] Explain how the habitat supports the survival of living things.<br>[ ] Describe how environmental factors could impact a habitat e.g. flood, drought. | [ ] Identify features of plants and animals.<br>[ ] Explain how features help animals to survive.<br>[ ] Explain how features help plants to survive.<br>[ ] Consider an alternative environment that a plant or animal could live in. | [ ] Identify features of a habitat.<br>[ ] Identify plants and animals that live within the habitat.<br>[ ] Explain how the habitat supports the survival of living things.<br>[ ] Describe how environmental factors could impact a habitat e.g. flood, drought. | [ ] Identify features of plants and animals.<br>[ ] Explain how features help animals to survive.<br>[ ] Explain how features help plants to survive.<br>[ ] Consider an alternative environment that a plant or animal could live in. | [ ] Identify features of a habitat.<br>[ ] Identify plants and animals that live within the habitat.<br>[ ] Explain how the habitat supports the survival of living things.<br>[ ] Describe how environmental factors could impact a habitat e.g. flood, drought. | [ ] Identify features of plants and animals.<br>[ ] Explain how features help animals to survive.<br>[ ] Explain how features help plants to survive.<br>[ ] Consider an alternative environment that a plant or animal could live in. |
| familiar<br>countryside | alternative<br>impact | polar desert<br>unfamiliar | arctic<br>camouflage | sand desert<br>drought | humid<br>arid |
| | Link to woods/park/gardens/local area | Research using secondary sources | | | |

| Learning Overview - Science Year 3 |
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| Unit 1 – Theme(s) Light |

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| L.O. To understand that dark is the absence of light. | L.O. To identify a range of light sources, including the sun.<br><br>Venn diagram | L.O. To know that light is reflected. | L.O. To know how shadows are formed. | L.O. To find patterns in the way shadows change. | L.O. To set up a fair test to make comparisons. |
| Describe the difference between dark and light.<br>Recognise that we need light in order to see things.<br>Explain, using examples, how we know that dark is the absence of light.<br>Describe why objects are more or less visible in different levels of lighting. | Give an example of a natural light source.<br>State several different light sources.<br>Describe the difference between natural and artificial light sources<br>Name the energy source for producing the light. | State whether a surface is shiny or dull<br>Recognise that shiny surfaces reflect light betters.<br>Describe the differences when light is reflected from different surfaces. e.g., smooth shiny/rough dull.<br>Identify when changes in surface might be advantageous. | Demonstrate how a shadow is formed.<br>Describe how a shadow is formed.<br>Describe how a shadow changes depending on the position of the object and the light source.<br>Make predictions about how shadows change over a period of time. | Demonstrate how a shadow can be changed in size by moving the light source.<br>Describe the way a shadow changes when a light source is moved closer/ further away.<br>Explain why shadows change size.<br>Use findings to predict the size and position of a shadow.<br><br>Bar chart | Identify at least one variable that might affect the size of a shadow.<br>Describe how to do an experiment to investigate this variable.<br>Explain which variables need to be controlled to ensure it is a fair test.<br>Identify variables which cannot be easily controlled. |
| absence of light<br>visible | light sources<br>natural<br>artificial | surface<br>reflected | opaque<br>shadow | silhouette<br>position | variable<br>comparison |
| | | Data loggers | when is the classroom darkest? | | |
| **Writing Across the Curriculum** | Wk 5 ~ NON-FICTION TEXT STYLE about knowledge of shadows. | | | | |

| **Learning Overview - Science Year 3** |
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| **Unit 2 – Theme(s) Animals including Humans** |

| Identifying, grouping and classifying | Research | Research | Research | Comparative/ fair testing | Comparative/ fair testing |
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| L.O. To understand that food has different nutritional content. | L.O. To explain the importance of a nutritionally balanced diet. | L.O. To observe the different nutritional value of similar foods and draw conclusions. *(e.g. best energy drink)* | L.O. To describe the skeletal system of vertebrates and invertebrates. | L.O. To describe the muscular system of a vertebrate. | L.O. To measure using equipment and standard units of measure. *(e.g. size of shoes/how fast they can run)* Block graph |
| Understand the function of each nutritional element.<br>Match the key nutritional elements for each food group e.g. dairy=milk, eggs etc.<br>Know that foods are divided into different nutritional elements. Carbs, protein, fats etc.<br>Justify which nutritional group is the most/ least important. | Identify different food groups e.g. bread/ pasta meat/ fish, dairy, beans/ pulses<br>Create a nutritionally balanced diet<br>State reasons why achieving a balanced diet is important.<br>Create a food diary to identify which food group is consumed the most. | Know how food labels display nutritional content.<br>Use food labels to compare nutritional value of similar foods<br>Communicate findings of comparisons between similar foods.<br>Explain findings using other methods e.g. Use of IT equipment. | Identify skeletons as being internal in all vertebrates.<br>Recognise main parts of skeletons in different vertebrates.<br>Understand basic function of skeletal system for protection, movement and support.<br>Research facts about skeletal system in some vertebrates. | Identify muscles as being internal in all vertebrates.<br>Understand basic function of muscular system.<br>Recognise that muscles can work in pairs e.g. relax/ contract<br>Research facts about different muscular system in 2 vertebrates. | Compare the different size of body part being investigated.<br>Use standard measure to record body part size.<br>Communicate findings of investigation suggesting reasons for outcome.<br>Suggest reasons why results may differ for different groups. |
| nutrition<br>nutrient | carbohydrates<br>protein | nutritional value<br>energy | invertebrates<br>vertebrates<br>internal | contract<br>reflex | outcome<br>analyse |
| | | | | Investigate if children are square – e.g. same length hand to hand and foot to head.<br><br>Comparative test<br>Notice patterns – older/younger are more/less square | |
| **Writing Across the Curriculum** | Wk 2 ~ INFORMATION LEAFLET about a how to eat a balanced diet. Direct audience at other children. | | | | |

**Learning Overview - Science Year 3**

| Unit 3 – Theme(s) Animals including Humans | | | | | |
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| | | | | | |
| L.O. To use specific names for private body parts. | L.O. To understand different ways of keeping healthy in the sun. | L.O. To know how some legal substances can affect a person's mind, body and work. | L.O. To describe and recognise the difference between a secret and a surprise. | L.O. To know how to keep safe near roads and traffic. | L.O To understand how to keep safe near water. *(pit ponds/ lake)* |
| Know that people can have different names for private body parts.<br>Know people must have consent to touch or change our private body parts.<br>Use scientific names for private body parts.<br>Understand why there are scientific names for body parts. | Identify some things that we might do on a sunny day.<br>Recognise how the sun can be dangerous.<br>Explain how to protect our skin and eyes from the sun.<br>Explore why the sun is important to human health. | Explore our understanding of alcohol, caffeine and tobacco products. cigarettes, e-cigarettes)<br>Understand how these substances affect our body and mind.<br>Recognise reasons for restrictions on legal substances.<br>Debate whether 16 is a suitable age for caffeinated drinks. e.g energy drinks. | Identify examples of secrets and surprises.<br>Create a definition for a secret and a surprise.<br>Understand why a secret could be harmful and may need to be shared.<br>Give examples of secrets that would need to be shared. | Recognise the risks associated with being near roads.<br>Acknowledge some actions which would increase road safety.<br>Communicate clear understanding of green cross code.<br>Suggest ways road safety could be improved around school/ local environment. | Recognise the risks associated with being near open water.<br>Consider some actions which would increase our safety when near water.<br>Communicate clear understanding of water safety code.<br>Suggest ways water safety could be improved around the village. |
| private<br>specific | protect<br>UV radiation | legal<br>substances | secret<br>surprise | Green Cross Code<br>risk | open water<br>fatal |
| **Writing Across the Curriculum** | Wk 2 ~ SIMPLE NARRATIVE to help younger children to understand about keeping safe in the sun. Could use an animal or imaginary character that doesn't do it to explain what should be done. | | | | |

| Unit 4 – Theme(s) Rocks | | | | | |
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| |  |  |  |  |  |
| | LO: To compare and group different rocks. | LO: To describe different types of rocks, how they are formed and their uses. | LO: To describe how fossils are formed. | LO: To recognise that soil is made from rocks and organic matter. | LO: To make a prediction and then explain your findings using measurements. *(Erosion Experiment)* |
| ONE LESSON IN THIS UNIT WILL BE LINKED TO THE SCIENCE WEEK FOCUS. | [ ] Explore different types of rocks.<br>[ ] Group rocks together based on appearance.<br>[ ] Group rocks together based on physical properties.<br>[ ] Rank rocks according to given criteria.<br><br>Classification key | [ ] Identify uses of different types of rocks.<br>[ ] Recognise igneous and sedimentary rocks.<br>[ ] Explain how igneous and sedimentary rocks are formed.<br>[ ] Compare another type of rock to igneous and sedimentary. | [ ] Know where fossils can be found.<br>[ ] Understand fossils take a very long time to form.<br>[ ] Describe how fossils are formed.<br>[ ] Consider importance of fossils in Science.<br><br>Classification key | [ ] Explore contents of soil.<br>[ ] Identify some contents of soil.<br>[ ] Explain how soil is made.<br>[ ] Suggest environmental benefits of composting.<br><br>Classification key | [ ] Predict what will happen in the test.<br>[ ] Conduct your investigation.<br>[ ] Explain your findings.<br>[ ] Suggest how to improve the test if repeated. |
| | appearance<br>petrologist | sedimentary<br>igneous<br>metamorphic | fossil<br>palaeontology | content<br>organic matter | permeability |
| | | | | | How does adding different amounts of sand to soil affect water drainage? |
| **Writing Across the Curriculum** | Wk 6 ~ EXPLANATION chronologically explaining how soil is formed. | | | | |

| Learning Overview - Science Year 3 |
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| Unit 5 – Theme(s) Plants |

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| L.O. To explore the requirements of plant life and growth. *(air, nutrients and space to grow)* | L.O. To understand how requirements for life and growth vary from plant to plant. | L.O. To investigate ways in which water is transported in plants. | L.O. To draw simple conclusions using scientific language. | L.O. To identify and describe different parts of a flowering plant. | L.O. To explore parts flowers play in the life cycle of flowering plants. (*pollination, seed formation and seed dispersal.)* |
| Know basic requirements for plant growth.<br>Explore other requirements for growth inc air, nutrients and space.<br>Describe how the requirements for plant growth are met.<br>Justify which requirement is the most vital. | Explore requirements for a range of plants.<br>Discuss a variety of plants and their needs.<br>Explain how the needs of plants vary in different species.<br>Suggests reasons why plant requirements vary so much. | Know that water travels through the roots and stem.<br>Suggest ways to investigate how water is transported.<br>Identify factors which may affect the success of our investigation.<br>Suggest how reliable your results will be. | Talk about what we have observed.<br>Accurately carry out your investigation.<br>Describe how water is transported in plants.<br>Suggest what would happen if the stem was split between 2 colours. | Name some parts of a flowering plant.<br>Identify all the parts of a flowering plant.<br>Describe the function of each part of the plant.<br>Explain why each part of the plant plays an important role. | Observe the parts of a real flowering plant.<br>Order the life cycle of a flowering plant.<br>Describe the stages of pollination, seed formation and seed dispersal.<br>Research other ways seeds are dispersed and consider which is most effective. |
| vital<br>requirements | vary<br>plant species | factors<br>transportation | transpiration<br>xylem | carpel<br>stamen | seed dispersal<br>pollination |
| Which conditions help seeds germinate faster? | | Set up kitchen paper experiment to show water being transported<br><br>How does the length of the stem affect how long it takes for the dye to affect the petals? | | | |
| **Writing Across the Curriculum** | Wk 1 ~ GUIDANCE INFORMATION for an owner of a new plant about how to take care of it. | | | | |

| **Learning Overview - Science Year 3** |
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| **Unit 6 – Theme(s) Magnetic Forces** |

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| LO: To know magnets have a north and south pole and observe how they react to each other. | LO: To identify and classify which materials are attracted to magnets. | LO: To observe that magnetic forces can act at a distance without direct contact. | LO: To explain why we need to collect information to answer a question. (*Magnet Investigation*) | LO: To use measurements to explain what was found out and whether it helps answer the question. | LO: To research further how magnets are used in everyday life. |
| [ ] Explore how magnets react to each other.<br>[ ] Know that magnets have a north and south pole.<br>[ ] Predict whether magnets will repel or attract.<br>[ ] Identify uses of magnets in everyday life. | [ ] Explore the attraction of different materials to magnets.<br>[ ] Sort the materials according to magnetism.<br>[ ] Classify types of materials that attract magnets.<br>[ ] True or false? All metals attract magnets. | [ ] Explore a range of different magnets.<br>[ ] Understand magnetic force attracts without direct contact.<br>[ ] Evaluate how the distance from a magnet affects the magnetic strength needed to attract an object.<br>[ ] Understand how the size and strength of a magnet affects the distance it can attract from. | [ ] Consider the enquiry question.<br>[ ] Decide what information needs collecting.<br>[ ] Record results accurately in a table, using standard units of measure..<br>[ ] Explain why your results may be different to someone else. | [ ] Communicate results.<br>[ ] Refer to measurements when explaining the results.<br>[ ] Evaluate whether the results answered the enquiry question.<br>[ ] Identify new enquiry questions from results. | |
| repel<br>attract | magnetic force<br>iron | contact force<br>non-contact force | justify<br>enquiry | evaluate | |
| | | Does the size and shape of a magnet affect how strong it is? | | | |
| **Writing Across the Curriculum** | Wk 4 ~ EXPLANATION about why information is important to enquiry in Science. Compare how things move on different surfaces – which surface is best to stop you slipping? | | | | |

| **Learning Overview - Science Year 4** |
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| **Unit 1 – Theme(s) States of Matter** |

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| To compare and group solids, liquids and gases. | To understand what happens to materials when they are heated or cooled. | To set up a practical enquiry to measure the temperature when materials change state. | To understand how temperature can cause a change of state in water. | To understand the changes of state in the water cycle. | To use results to draw simple conclusions. |
| Name the 3 states of matter.<br>Identify whether a substance is a solid, liquid or gas.<br>Describe some of the properties of a solid, liquid and gas.<br>Use knowledge of the structure to explain the properties. | State how the appearance of the material has changed upon heating/ cooling.<br>Correctly use the words freezing, melting, and boiling<br>Describe the change of state when substances boil, freeze or melt.<br>Suggest factors that might make solids melt more quickly. | Follow instructions and correctly set up equipment to collect data.<br>Make simple observations and take accurate measurements.<br>Make systematic observations taking accurate measurements using standard units.<br>Predict the effect of other variables on the rate of cooling | Identify the different states of water.<br>Describe how to change the state of water.<br>Identify the change of state which happens when boiling, freezing, evaporation occurs.<br>Predict the state of water at a given temperature. | Suggest reasons how a puddle forms and then disappears.<br>Describe the different stages of the water cycle<br>Identify where evaporation, condensation and precipitation take place in the water cycle.<br>Predict what happens if there is an imbalance of evaporation and condensation. | Identify a simple pattern in my results.<br>Describe a pattern and explain using everyday knowledge.<br>Describe and explain a pattern in their evidence using scientific knowledge.<br>Identify any results which don't fit this pattern. |
| state<br>particle | Celsius<br>boiling – freezing – melting point | solidify<br>systematic | evaporation<br>condensation | water vapour<br>precipitation | conclusion<br>anomaly |
| | | Data loggers | How does the level of water in a glass change when left on a windowsill? | Fair test - How does surface area of a container of water affect how long it takes to evaporate?<br>Comparative – does sea water evaporate quicker than freshwater? | Is there a pattern in how long it takes different sized ice lollies it takes to melt? |
| **Writing Across the Curriculum** | Wk 1 ~ EXPLANATION about what each state is and properties relating to each. | | | | |

| **Learning Overview - Science Year 4** |
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| **Unit 2 – Theme(s) Electricity** |

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| L.O. To identify common appliances that use electricity.<br>**Consider precautions for working safely* | L.O. To name and draw components and construct a simple circuit. | L.O. To identify whether or not a lamp will light in a series circuit. | L.O To investigate some conductors and insulators. | L.O. To understand the function of a switch in a circuit. | To use results to draw simple conclusions and present these in different ways. |
| Name 3 appliances which use electricity.<br>Sort objects into those that require electricity and those that do not.<br>Give own examples of several appliances that use mains OR batteries<br>Give own examples of several appliances that use mains AND batteries | Identify a cell, wire, bulb and buzzer.<br>Name the parts and construct a circuit that will light a bulb.<br>Construct and draw a circuit with a cell, wire and bulb<br>Explore ways of making the bulb brighter.<br><br>Do not use circuit symbols, children need to draw components. | Give 1 reason why a bulb will not light in a circuit,<br>(no bulb, no cell)<br>Give several reasons why a bulb may not light up.<br>Predict correctly whether or not a bulb will light up<br>Investigate the effect of adding more than 1 cell to a circuit. | Recognise that some materials let electricity through, and some do not.<br>Use practical methods to find out which materials conduct electricity.<br>Correctly use the term conductor and insulator.<br>Suggest why some materials are better conductors. | Recognise that the switch turns the bulb on or off.<br>Know why a bulb lights when a switch is on.<br>Know why switches are useful in circuits<br>Explain how a switch affects electrical current. | Make a simple record of which materials can/ cannot conduct electricity.<br>Record findings and suggest reasons for results.<br>Display results and write a conclusion about which materials are conductors and which are insulators.<br>Apply their knowledge of materials to correctly predict whether a material is a conductor or an insulator. |
| appliance<br>safety feature | component<br>circuit | series circuit<br>flow of energy | conductor<br>insulator | current<br>open/closed switch | conductivity |
| Pattern seeking – Which room has the most electrical sockets (house/homework) | | Research using secondary sources – how does a lightbulb work? | Spinner with different variables that children can use to create a question.<br><br>Data loggers | Does the position of the switch in the circuit make a difference? – Comparative<br><br>Data loggers<br>Make own switch using paperclip and split pins | |
| **Writing Across the Curriculum** | Wk 6 ~ SCIENTIFIC WRITING around writing a conclusion which explains the differences between conductors and insulators. Include supporting evidence. | | | | |

| **Learning Overview - Science Year 4** |
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| **Unit 3 – Theme(s) Sound** |

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| L.O. To compare and describe sources of sound. | L.O. To know how sound travels. | L.O. To find patterns between the volume and strength of vibrations. | LO: To recognise that sounds get fainter as distance increases | L.O. To plan a fair test and isolate the variables. | L.O. To explain and evaluate our findings using scientific vocabulary. |
| Name a variety of sound sources.<br>Compare different sources of sound.<br>Using correct scientific vocabulary, describe and compare different sources of sound.<br>Explain how sounds from a single source can be changed. | Explore how sound travels to the ear.<br>Know that sound is created through vibrations.<br>Communicate how sound vibrations travel through the ear to register sound.<br>Research if bigger ears result in better hearing.<br>Indian/ African elephant. | Explore how sound vibrations change with volume.<br>Observe how sound vibrations change with the volume.<br>Communicate the pattern between the volume of the sound and strength of the vibration<br>Explain why a loud sound travels further than a quiet sound.<br>Line graph | Describe what makes a fair test.<br>Isolate independent variables for a sound experiment.<br>Use data-logger correctly to measure sound.<br>Record accurate measurements of sound in decibels.<br>Consider accuracy of constant variables. | Describe what makes a fair test.<br>Isolate independent variables for a sound experiment.<br>Use data-logger correctly to measure sound.<br>Record accurate measurements of sound in decibels.<br>Consider accuracy of constant variables.<br><br>Take any sound experiment and change one variable of it to answer a question. Line graph | Observe and discuss the data that has been collected.<br>Highlight key findings from the collected data.<br>Explore and evaluate findings.<br>Suggest improvements for experiment process. |
| sound source<br>origin | vibrate<br>vibration | amplification<br>faint | muffled<br>fainter | data-logger<br>isolate | key findings |
| | | (rice and drum)<br>(cornflour and speaker) | Muffling investigation | | Set up data logger over period of time – when is the classroom quietest? – observe changes over time<br>Teach how to write a conclusion – children to practise writing own conclusion |
| **Writing Across the Curriculum** | Wk 2 ~ NON-FICTION TEXT STYLE to explain how sound travels. | | | | |
| **Learning Overview - Science Year 4** | | | | | |
| **Unit 4 – Theme(s) Sound** | | | | | |

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| | Research | Comparative/ fair testing | Comparative/ fair testing | Comparative/ fair testing | Comparative/ fair testing |
|---|---|---|---|---|---|
| | LO: To understand that the ear hears different pitch. | LO: To explain how you could change the pitch of a sound. | LO: To describe which information needs collecting and take measurements using different equipment. *(Prep and complete Experiment)* | LO: To report on patterns in measurements and draw simple conclusions. *(Report Experiment)* | LO: To carry out a comparative test to investigate how well different materials absorb sound. |
| ONE LESSON IN THIS UNIT WILL BE LINKED TO THE SCIENCE WEEK FOCUS. | [ ] Know what is meant by pitch.<br>[ ] Know that pitch is communicated to the ear.<br>[ ] Understand the difference between high and low pitch sounds.<br>[ ] Research why some animals can hear higher pitch sounds. | [ ] Explore the pitch of different objects.<br>[ ] Understand why the pitch has changed.<br>[ ] Explain how to change the pitch in different ways.<br>[ ] Predict how water affects the pitch of an object. | [ ] Discuss investigation about pitch.<br>[ ] Consider what information needs to be collected.<br>[ ] Make and record measurements accurately<br>[ ] Suggest ways to improve the accuracy of results. | [ ] Compare highest and lowest measurements.<br>[ ] Find patterns in measurements recorded.<br>[ ] Draw conclusions about what results show.<br>[ ] Present findings in an alternative way. | [ ] Discuss investigation question.<br>[ ] Consider what information needs to be collected.<br>[ ] Make and record measurements accurately.<br>[ ] Suggest ways to improve the accuracy of results. |
| | pitch<br>cochlea | audio<br>range | transmit<br>frequency | patterns | absorb |
| | Research | A range of elastic bands (size) and containers (size and material)<br><br>Comparative/fair testing | Bottles – filling with water<br><br>Straws – shorter/longer<br><br>Comparative test | Model how to write a conclusion - scaffold | Conduct a fair test, investigating how the number of layers of a material affects the amount of sound it absorbs. |
| **Writing Across the Curriculum** | Wk 3 ~ PERSONIFICATION Write as each musical instrument to explain how to change their pitch. Could be a story, including dialogue between the instruments. TO BE REVIEWED. | | | | |

| Learning Overview - Science Year 4 SWITCH WITH UNIT 6 – food chains first | | | | | |
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| Unit 5 – Theme(s) Animals including Humans | | | | | |
| | | |  |  |  |
| LO: To describe the effects and risks of legal substances including caffeine, tobacco and alcohol. (e-cigarettes/cigarettes) | LO: To understand healthy food choices. | LO: To understand reasons for good oral hygiene in humans. | LO: To identify functions of different types of teeth and compare those of carnivores and herbivores. | LO: To identify, name and describe the simple functions of the basic parts of the digestive system in humans. (*mouth, tongue, teeth, oesophagus, stomach, large/small intestine*) | LO: To construct, interpret and explain a variety of food chains. |
| [ ] Understand that legal substances can have negative risks.<br>[ ] State some risks of the substances.<br>[ ] State a variety of risks and their effects for each substance.<br>[ ] Consider why these substances are legal if they have negative risks. | [ ] Identify some healthy and unhealthy foods.<br>[ ] Understand that foods have different nutritional value.<br>[ ] Explain why healthy food choices are important.<br>[ ] Do you make healthy food choices? Explain why or why not. | [ ] Know oral hygiene refers to mouth and teeth.<br>[ ] Understand how people perform good oral hygiene.<br>[ ] Explain the consequences of poor oral hygiene.<br>[ ] Explore how fluoride helps with oral hygiene. | [ ] Know that teeth help us to eat and speak.<br>[ ] Know the functions and names of the teeth.<br>[ ] Explain the difference between the teeth of herbivores and carnivores.<br>[ ] Rank carnivore teeth in order of importance. | [ ] Know the digestive system helps human's process food.<br>[ ] Identify and name each part in order.<br>[ ] Explain the journey of food through the digestive system.<br>[ ] Justify which part of the digestive system is most important. | [ ] Know what a food chain shows.<br>[ ] Identify producers, consumers, predators and prey from a range of habitats.<br>[ ] Explain how energy is transferred through food chains.<br>[ ] Compare a food chain with a food web. |
| oral<br>enamel | nutritional value | oral hygiene | molar<br>incisor<br>canine | saliva<br>oesophagus<br>digestion<br>intestines | producer – consumer<br>predator – prey |
| | | | Use kitchen equipment – a spoon/knife/potato masher for each type of teeth<br><br>Eggshells in different liquids – observation over time | | |
| **Writing Across the Curriculum** | Wk 3 ~ INFORMATION LEAFLET about good oral hygiene. Why is it important to look after our teeth and mouths, and how do we do it. | | | | |

| Learning Overview - Science Year 4 |
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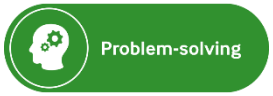
| Unit 6 – Theme(s) Living Things & Their Habitats | | | | | |
|---|---|---|---|---|---|
| | | |  |  |  |
| L.O. To know scientific names and function of reproductive body parts. | L.O. To know what puberty is and how it happens. | L.O. To understand about personal boundaries and privacy. | L.O. To recognise that living things can be grouped in a variety of ways. *(reptile, mammal, amphibian and fish)* | L.O. To compare living things on land to living things under the sea. | L.O. To recognise that environments can change and this can sometimes pose a threat to living things. |
| Know what is meant by the term reproduction.<br>Know the scientific names for reproductive body parts.<br>Name and locate the reproductive body parts.<br>Know why these differ in males and females. | Understand that puberty means changes in the body.<br>List some simple changes that happen during puberty.<br>Explain why puberty happens.<br>Describe the place of puberty in the human lifecycle. | Know that a person has a right to privacy.<br>Know what is meant by a personal boundary.<br>Explain how to react when boundaries and privacy are not respected.<br>Suggest when people's boundaries may differ. | Identify common factors of a range of animals.<br>Sort animals according to different features.<br>Use the terms mammal, amphibian, bird and reptile to group animals.<br>Identify a subgroup within those sorted.<br><br>Classification key | Explore land and sea habitats.<br>Identify key features of land and sea animals.<br>Compare similarities and differences.<br>Explain why these differences are needed and how they support living things | Explore how sea habitats can change.<br>List key changes seen in a sea habitat.<br>Suggest how some changes have had a negative impact on sea life.<br>Consider ways humans can reverse negative impact. |
| penis<br>vagina | puberty<br>perspiration | privacy<br>boundaries | subgroup<br>amphibian | positive impact<br>negative impact | positive impact<br>negative impact |
| | | | | | Woods – links to children experience and real life |
| **Writing Across the Curriculum** | Wk 6 ~ NON-CHRONOLOGICAL REPORT about a sea environment and the changes it has gone through. Use given sub-headings to help organize the report. | | | | |
| | | | | | |

**Learning Overview - Science Year 5**

| Unit 1 – Theme(s) Properties & Changes to Materials | | | | | |
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|  |  |  |  |  |  |
| L.O. To group everyday materials based on their hardness/ transparency and magnetism. | L.O. To compare and group materials based on their electrical conductivity. | L.O. To compare thermal conductivity of different materials *(conductors).* | L.O. To present findings and conclusions including degree of trust in results. | L.O. To compare and group materials based on their thermal conductivity. *(insulators)* | L.O. To explore the work of a chemist who created a new material. |
| Use the term hard, opaque, transparent, translucent correctly.<br>Rank materials in order of translucency and hardness.<br>Suggest, with reasons which material to use for a purpose.<br>Explain why most suitable material may not always be the one most used. | State the difference between electrical conductors and insulators<br>Give a reason why some materials are better conductors/ insulators.<br>Describe a means of identifying best -> worst electrical conductors.<br>Research and give examples of electrical conductors and insulators in everyday life. | Observe that some materials heat up faster than others<br>Plan an enquiry to find out which materials heat up fastest.<br>Explain why some materials heat up faster than others<br>Give a scientific reason why some materials are good conductors of heat. | State which material is the best thermal conductor.<br>Use results to rank materials in order of thermal conductivity.<br>Suggest how experiments could be improved to give more confidence in their results.<br>Give everyday examples good thermal conductors. | Suggest ways of keeping things warm/cool.<br>State that insulators keep things hot/cold for longer.<br>Recommend suitable materials to keep something hot/cold based on own scientific evidence.<br>Research and give scientific reasons why some materials are better insulators. | Observe and discuss the discovery of a new material.<br>Describe how the material was discovered/ made.<br>Explain the benefits of the material.<br>Suggest other uses for their discovery. |
| translucent<br>diffuse | electrical conductivity | thermal conductivity<br>heat transfer | degree of trust<br>confidence | thermal insulator | chemist<br>Leo Baekeland<br>Edouard Benedictus |
| | | | | Design a mug for teacher to have hot drink<br><br>Conclusion – link to real life situations – Give reasons based on evidence from comparative and fair test for the particular uses of everyday materials inc metal wood and plastic | |
| **Writing Across the Curriculum** | Wk 6 ~ JOURNAL ENTRY about how you witnessed a chemist create a new material. | | | | |

**Learning Overview - Science Year 5**

**Unit 2 – Theme(s) Properties & Changes to Materials**

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| L.O. To observe how some materials dissolve to form a solution. | L.O. To investigate temperature on the rate of dissolving and present this with graphs and conclusions. | L.O. To know that some changes are reversible. | L.O. To know that some changes result in the formation of a new material. *(irreversible change)* | L.O. To understand how mixtures can be separated and the order of separation. *(filtering, sieving and evaporating)* | LO: To observe the rusting of a nail in water and then test in other kinds of liquid. (Lesson 6) |
| Correctly state whether or not a substance has dissolved.<br>Know that a dissolved substance is soluble and creates a solution.<br>Make observations and classify a substance as soluble or insoluble.<br>Suggest how we could find out the order of solubility of sand, sugar and salt. | Observe to find whether sugar dissolves faster in hot or cold water<br>Carry out a fair test to investigate the effect of temperature on the rate of dissolving.<br>Present results as a line graph and draw conclusions- how temperature affects the rate of dissolving<br>Suggest how to improve the accuracy of their results.<br><br>Line graph | Describe how a substance has changed.<br>Recognise whether a change is reversible.<br>Give examples of some reversible changes<br>Research why some reactions are reversible. | Describe the changes in a material (bread- toast).<br>Describe what changes have occurred and know if a new material has been made.<br>Correctly identify when an action is irreversible because a new substance has been formed.<br>Identify other examples of irreversible change. | Use a sieve to separate pebbles and say why it works.<br>Use a sieve and filter paper to separate pebbles and sand.<br>Describe the process.<br>Use sieve, filter paper and evaporation to obtain pebbles, salt and sand from solution.<br>Explain the methods used for separating a mixture using ideas about solubility and particle size. | |
| soluble – insoluble<br>dissolve – solution | solute<br>solubility | reversible | irreversible<br>substance | filtrate<br>residue | |
| | Which temperature of water dissolves sugar the quickest? | Sugar cube in water | acid and bicarbonate of soda | Add metals and use a magnet to remove | observation over time – nail in salt water |
| **Writing Across the Curriculum** | Wk 1 ~ SCIENTIFIC OBSERVATIONS around dissolving and solutions. Write a clear and scientific observation for each solution. | | | | |

**Learning Overview - Science Year 5**

| Unit 3 – Theme(s) Animals including Humans | | | | | |
|---|---|---|---|---|---|
| L.O. To describe the changes as humans develop to old age. | L.O. To know the changes occurring in puberty. | L.O. To know parts of the male reproductive system. | L.O. To know parts of the female reproductive system. | L.O. To understand the importance of sleep on a healthy body. | L.O. To know how to keep ourselves safe in different situations. |
| Identify physical changes to humans during their lifetime.<br>Communicate the order in which humans grow and change.<br>Describe the key features of different stages of life<br>Compare changes to other mammals. | Explore human puberty<br>Highlight the key physical changes occurring during puberty (including good hygiene and regular washing).<br>Recognise emotional changes occurring during puberty.<br>Express own thoughts and feelings about puberty. | Know scientific words for parts of the male reproductive system.<br>Understand the function of the male reproductive system.<br>Recognise the changes that happen to the male reproductive system during puberty.<br>Engage maturely in conversations about how puberty might affect males. | Know scientific words for parts of the female reproductive system.<br>Understand the function of the male reproductive system.<br>Recognise the changes that happen to the female reproductive system during puberty.<br>Engage maturely in conversations about how puberty might affect females. | Identify ways to be healthy.<br>Describe how sleep is important for a healthy mind and body.<br>Communicate ways to ensure a healthy sleep pattern.<br>Rank sleep, nutrition and exercise in order of importance and justify reasons. | Recognise what it means to be pressured in an unacceptable way.<br>Know the difference between appropriate and inappropriate touch.<br>Develop strategies to assess, manage and resist pressure.<br>Explain how to help a friend who doesn't want to share a secret. |
| infancy<br>adolescent | hormones<br>testosterone | testes<br>sperm | ovaries<br>uterus | sleep pattern | appropriate/ inappropriate<br>pressure |
| Science | | | | | |
| **Writing Across the Curriculum** | Wk 5 ~ PERSUASION to help people understand the importance of sleep and how it affects our bodies. | | | | |

| Learning Overview - Science Year 5 |
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| Unit 4 – Theme(s) Forces |

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| | LO: To explain the force of gravity. | LO: To identify the effects of air resistance.<br>How does a parachute affect running rate around the playground – scatter graph | LO: To identify the effects of water resistance. | LO: To identify the effects of friction that act between moving surfaces. | LO: To recognise that some mechanisms allow a smaller force to have a greater effect *(levers, pulleys and gears).* |
| ONE LESSON IN THIS UNIT WILL BE LINKED TO THE SCIENCE WEEK FOCUS. | [ ] Know that gravity is a force that pulls objects towards the Earth.<br>[ ] Understand how gravity pulls objects to the Earth.<br>[ ] Explain why objects of different mass react to gravity differently.<br>[ ] Research planets with different gravitational pulls. | [ ] Explore examples of air resistance.<br>[ ] Understand how air resistance works.<br>[ ] Explain effects of air resistance in different situations.<br>[ ] Consider how air resistance can be used to help the environment. | [ ] Explore examples of water resistance.<br>[ ] Understand how water resistance works.<br>[ ] Explain effects of water resistance in different situations.<br>[ ] Consider how water resistance can be used to help the environment. | [ ] Explore examples of friction acting between surfaces.<br>[ ] Understand how friction occurs between two moving surfaces.<br>[ ] Explain how friction works between two moving surfaces.<br>[ ] Consider how friction can be used to help the environment. | [ ] Explore how pulleys, levers and gears work.<br>[ ] Understand how they work.<br>[ ] Explain how they can impact forces.<br>[ ] Prove: the longer the lever the easier it is to lift an object. |
| | gravity<br>gravitational pull<br>mass | air resistance<br>force | water resistance<br>up thrust | friction | mechanisms |
| | Research | | measuring cylinder with hand wash. Use playdough or blutack – change the shape and see how long it takes<br><br>How does the surface area of blutac affect the time it takes to reach the bottom? | | Levers/pulleys experiment |
| **Writing Across the Curriculum** | Wk 1 ~ FORMAL LETTER from Isaac Newton to another scientist to explain how gravity works. | | | | |

| **Learning Overview - Science Year 5** |
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| **Unit 5 – Theme(s) Earth & Space** |

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| L.O. To describe earth, space and moon as approximately spherical bodies. | L.O. To explain day and night and the apparent movement of the sun across the sky. | L.O. To describe and explain the movement of the moon relative to the earth. | L.O. To identify and explain the movements of the earth and other planets relative to the sun in the solar system. | L.O. To record and report their findings. |
| TRIP TO NATIONAL SPACE CENTRE | Know that the earth orbits the sun.<br>Understand that the earth rotates to create day and night every 24 hours.<br>Explain the apparent movement of the sun across the sky.<br>Suggest what would happen if the earth didn't rotate. | Know that the moon orbits the earth every 28 days.<br>Identify key phases of the moon.<br>Explain how the moon moves through its 4 phases.<br>Explain what a lunar eclipse is. | Know that the sun is a star and the earth is a planet.<br>Identify other planets in the solar system.<br>Explain how planets move relative to the sun<br>Describe the link between gravity and the solar system. | Highlight key information about earth and space.<br>Organise relevant information in appropriate form.<br>Present information clearly to the target audience.<br>Ensure that information is used from a range of sources. |
| | orbit<br>rotational | lunar eclipse<br>phases | solar system<br>celestial body | astronomy – atmosphere – hemisphere – galaxy<br>Ptolemy - Copernicus |
| | Observation over time | Observation over time | Research | |
| **Writing Across the Curriculum** | Wk 2 ~ EXPLANATION about how night and day occur and how the sun appears to move across the sky. | | | |

| **Learning Overview - Science Year 5** |
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| **Unit 6 – Theme(s) Living Things & Their Habitats** |

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| Research | Research | Pattern-seeking | Research | Pattern-seeking | Pattern-seeking |
|---|---|---|---|---|---|
| LO: To explore the work of a well-known naturalist. (*David Attenborough*) | LO: To describe sexual reproduction in flowering plants. | LO: To describe asexual reproduction in plants. | LO: To describe insect and amphibian life cycles. | LO: To describe mammal and bird life cycles. | LO: To compare life cycles of living things. |
| [ ] Explore information about David Attenborough.<br>[ ] Identify key features of his work.<br>[ ] Explain the significance of his work in science.<br>[ ] Explain the impact of his work on society today. | [ ] Know that plants reproduce.<br>[ ] Describe the stages of a flowering plants life cycle.<br>[ ] Explain sexual reproduction involving two different plants.<br>[ ] True or false? All flowering plants reproduce sexually. | [ ] Know that plants reproduce in different ways.<br>[ ] Understand asexual reproduction only needs one plant.<br>[ ] Describe the life cycle of an asexual plant.<br>[ ] Do trees reproduce sexually or asexually? | [ ] Know that different living things have different life cycles.<br>[ ] Know main stages of life cycles.<br>[ ] Explain main stages of insect and amphibian life cycles.<br>[ ] Compare the two life cycles. | [ ] Know that different living things have different life cycles.<br>[ ] Know main stages of life cycles.<br>[ ] Explain main stages of mammal and bird life cycles.<br>[ ] Compare the two life cycles. | [ ] Highlight some similarities between life cycles.<br>[ ] Highlight differences between life cycles.<br>[ ] Communicate comparison of life cycles.<br>[ ] Compare the human life cycle to other mammals. |
| naturalist<br>behaviourist<br>David Attenborough<br>Jane Goodall | anther<br>filament<br>stigma<br>style | asexual<br>spores<br>tubers | metamorphosis<br>larva | hatchling<br>viviparous<br>oviparous | comparative<br>dissimilarity |
| | | Pattern seeking – compare to previous week | | Is there a relationship between a mammal's size and their gestation period? – Scatter graph | |
| **Writing Across the Curriculum** | Wk 1 ~ BIOGRAPHY piece based on David Attenborough and the significance of his work. | | | | |

| Learning Overview - Science Year 6 | | | | | |
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| **Unit 1 – Theme(s) Electricity** | | | | | |
|  |  |  |  |  | |
| To draw a simple circuit using recognised symbols. | To compare and give reasons for how buzzers function within a circuit. | To explore different ways to test an idea, choose the best way and give reasons. | To accurately take measurements using scientific equipment. *(Data Logger)* | To report and present findings of causal relationships. | To know the dangers of electricity and necessary safety measures. |
| Identify and name the basic parts of a simple circuit.<br>Cell, buzzer, wire, bulb<br>State how symbols are used to represent components<br>Use symbols to draw a circuit diagram accurately.<br>Explain how electrical components work. | Explore a buzzers performance within a circuit<br>Recognise how a change in circuit may affect a buzzers performance.<br>Describe the changes in a buzzers performance when a circuit is changed.<br>Identify faults in given circuits. | Discuss possible investigations.<br>Identify possible ways to carry out our own investigations.<br>Create our own investigation plan, giving reasons for our choices.<br>Use information from other sources to plan an investigation. | Explore the use of scientific equipment.<br>Use scientific equipment to gather the correct data.<br>Independently take and record accurate measurements.<br>Explain the need for accuracy in scientific investigations. | Identify our basic findings.<br>Communicate findings in a clear format (table, chart, diagram).<br>Explain the causal relationship in the results achieved.<br>Link conclusions to other scientific knowledge. | Recognise some electrical hazards.<br>Describe the dangers of electricity.<br>Identify the safety features of electrical appliances.<br>Explore the dangers of a short circuit. |
| schematic drawing | voltage<br>faults | positive / negative terminal | watts<br>amps<br>volts | causal relationship<br>resistance | electrocute<br>short circuit |
| | | Fair test – How does the voltage of the batteries in a ciurcut affect the volume of the buzzer/the brightness of a bulb<br><br>Data loggers | | | |
| **Writing Across the Curriculum** | Wk 6 ~ INFORMATION LEAFLET about the dangers of electricity and safety measures. Paragraphs of information to be written. | | | | |

Learning Overview - Science Year 6

| Unit 2 – Theme(s) Animals including Humans (RSHE) | | | | | |
|---|---|---|---|---|---|
| Research | Research | Comparative/ fair testing | Research | | |
| L.O. To identify and name the basic parts of the circulatory system and describe its function. | L.O. To describe the ways in which nutrients and water are transported in our bodies. | L.O. To explore the effect of exercise on heart rate. | L.O. To recognise the impact of diet, exercise, drugs and lifestyle on the health of our heart. (inc. e-cigarettes/cigarettes) | L.O. To understand what puberty is and how it affects our mind and body. | L.O. To explain how reproduction occurs including conception, pregnancy and birth. |
| Name and locate the heart.<br>Know that the heart is a pump which pumps blood around the body.<br>Know that the heart is a double pump, pumping blood to the lungs and around the body.<br>Draw and label a diagram of the heart. | Know that our blood delivers useful things to our muscles.<br>Know that blood travels through blood vessels and name some of the useful things that it delivers.<br>Know that arteries carry nutrients and oxygen to our muscles and veins carry water and carbon dioxide away.<br>Compare the heart of a human and a fish. | State what happens to our heart when we exercise.<br>Use results to suggest which type of exercise made their rate increase the most.<br>Describe and explain how exercise affects the heart rate.<br>Explain how we increased our confidence in our results. | State one positive factor and one negative factor that affect the health of the heart.<br>State three positive and three negative factors that affect the health of the heart.<br>Apply their knowledge of factors that affect the heart to recommend ways to keep their heart healthy.<br>Give a description of factors that affect the heart. | Give an example of how your body may change at puberty<br>Give several examples of how your body may change at puberty<br>Describe the main changes in boys and girls that occur at puberty.<br>Research why changes occur at puberty. | Use correct scientific terms for human reproductive organs<br>Describe how reproductive organs allow egg and sperm to join<br>State what happens during pregnancy and birth.<br>Compare gestation periods of different animals. |
| circulatory system<br>artery<br>vein | capillaries | contractions<br>pulse metre | valves<br>carcinogenic | mood swing<br>pubescent | conception<br>gestation |
| | | | | | |
| **Writing Across the Curriculum** | Wk 2 ~ CREATIVE FICTION write a story/diary/narrative poem as a blood cell about its journey around the body. | | | | |

**Unit 3 – Theme(s) Living Things & Their Habitats**

| Identifying, grouping and classifying | Research | Identifying, grouping and classifying | Identifying, grouping and classifying | Identifying, grouping and classifying | Identifying, grouping and classifying |
|---|---|---|---|---|---|
| L.O. To be able to group animals into reptiles, mammals, amphibians, birds and fish. | L.O. To find out about the significance of the work of Carl Linnaeus. | L.O. To understand the process of classification. *(how to do it)* | L.O. To use a given classification key to group animals. *(reptiles, mammals, amphibians, birds and fish) invertebrates* | L.O. To use a given classification key to group plants. | L.O. To use own subject focus to create own criteria to record and present. |
| Identify fish and birds as being different animal groups.<br>Create a definition for reptiles, amphibians, and mammals.<br>Group animals according to characteristics.<br>Sub-divide their original grouping and explain difficulties. | Explore information about Carl Linnaeus.<br>Identify the key features of the work of Carl Linnaeus.<br>Explain the significance of the work of Carl Linnaeus in science.<br>Find examples of how Carl Linnaeus classification is used today. | Identify differences to begin to follow the classification process.<br>Answer questions to understand how to classify.<br>Explain the classification process.<br>Compare classification to a Venn diagram. | Follow the classification process.<br>Use classification key to identify features of common animals within a group.<br>Use a key to be able to identify animals in the same group.<br>Identify animals from different animal groups which have similar characteristics. | Use part of plant to follow the classification process.<br>Use classification key to identify features of common plants.<br>Use a key to be able to identify plants in the same group.<br>Identify plants from different plant groups which have similar characteristics. | Explore a suitable subject for classification focus.<br>Formulate own classification questions.<br>To record and present their classification to others.<br>Choose a method of presentation that enhances understanding of data. |
| characteristics | classification<br>species<br>Carl Linnaeus | classification key<br>taxonomy | attribute | botany | formulate classification system |
| Grouping and classifying | | Grouping and classifying | Grouping and classifying | Grouping and classifying | Grouping and classifying |
| **Writing Across the Curriculum** | Wk 2 ~ MAGAZINE INTERVIEW with Carl Linnaeus about his work and why it was important. | | | | |

| Unit 4 – Theme(s) Inheritance & Evolution | | | | | |
|---|---|---|---|---|---|
| | | |  |  |  |
| | LO: To understand how to keep safe in risky situations. | LO: To understand different types of relationships. | LO: To recognise fossils provide information about living things that lived millions of years ago. | LO: To explore the impact of the work of Mary Anning. | LO: To identify how plants have adapted to suit their environment and evolved. |
| ONE LESSON IN THIS UNIT WILL BE LINKED TO THE SCIENCE WEEK FOCUS. | [ ] Explore how to assess risks in different situations.<br>[ ] Show an awareness of risky personal situations such as FGM and other types of abuse.<br>[ ] Understand how to resist pressure in risky situations.<br>[ ] Identify how a person's response may differ in different situations. | [ ] Know that people can choose to be in different relationships.<br>[ ] Know correct terms for different relationships.<br>[ ] Explain what makes a healthy relationship.<br>[ ] Explore some organisations that can help with unhealthy relationships. | [ ] Know that fossils were once living things.<br>[ ] Explore fossils to make own observations.<br>[ ] Explain how fossils provide information about living things in the past.<br>[ ] Describe how fossils can be used to explain animals' lives. | [ ] Explore information about Mary Anning.<br>[ ] Identify key findings.<br>[ ] Explain impact of Mary Anning's findings.<br>[ ] Compare Mary Anning's methods with modern day palaeontologists. | [ ] Know evolution means changes in living things.<br>[ ] Highlight key evolutionary similarities and differences.<br>[ ] Explain how environments have impacted key evolutionary changes.<br>[ ] Predict potential future evolutionary changes. |
| | peer pressure<br>exploitation | Healthy/unhealthy relationships | organism<br>fossilised | palaeontologist<br>evolution<br>Mary Anning | evolutionary change<br>adaptation |
| | | | | | |
| **Writing Across the Curriculum** | Wk 5 ~ BIOGRAPHY Write the biography of Mary Anning. | | | | |

| Unit 5 – Theme(s) Evolution & Inheritance | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| L.O. To identify how animals have adapted to suit their environment and evolved.<br>*(Not humans)* | L.O. To identify how humans have adapted to suit their environment and evolved. | L,O, To analyse the advantages of specific adaptations through evolution. | L.O. To recognise that living things produce offspring of the same kind but vary and are not identical to parents. | L.O. To understand why offspring are not identical to each other or their parents. | L.O. To explore in simple terms a scientific idea and consider the evidence that supports this. |
| Match an evolved animal with its ancestor.<br>Identify the key evolutionary similarities and differences.<br>Explain how the environment has impacted key evolutionary changes in animals.<br>Predict future evolutionary changes. | Match an evolved human with its ancestor.<br>Identify the key evolutionary similarities and differences.<br>Explain how the environment has impacted key evolutionary changes in humans.<br>Predict future evolutionary changes. | Highlight evolutionary changes.<br>Consider the advantages of evolutionary adaptations.<br>Consider the disadvantages of evolutionary adaptations.<br>Consider how environment could impact future evolution. | Understand that all living things reproduce offspring.<br>Understand that living things reproduce offspring of the same kind.<br>Highlight the differences between parents and offspring.<br>List potential variation between humans and their offspring. | Know that we are not born identical to our parent or sibling.<br>Consider why offspring are not identical.<br>Explain why offspring are not identical.<br>Suggest reasons why twins are identical. | Remember key facts of evolution and inheritance.<br>Explain evolution and inheritance in scientific words.<br>Use evidence to support explanation.<br>Refer to the work of other scientists regarding evolution and inheritance. |
| ancestor<br>evolve | theorist<br>natural selection<br>Charles Darwin | inheritance<br>environmental variation | inherited<br>offspring<br>identical | genes | evidence<br>inherited traits<br>acquired traits |
| Battle of the beaks | Research | Research | Follow a book called Molly Bird or Mr Men/Little Miss<br><br>Pattern seeking | | |
| **Writing Across the Curriculum** | Wk 5 ~ EXPLANATION Write an explanation to explore why offspring are not identical and why they do not look exactly like their parents. | | | | |

| Learning Overview - Science Year 6 |
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| Unit 6 – Theme(s) Light |

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| LO: To know how light travels and how objects are seen by the eye. | LO: To make and use a periscope as evidence that light travels in straight lines. | LO: To explore different ways to test an idea about light and choose the best way. | LO: To use information to explain predictions when planning a test. | LO: To vary one factor whilst keeping the other the same in an experiment. | LO: To choose appropriate methods of reporting findings that consider the degree of trust in results. |
| [ ] Know that light travels in straight lines.<br>[ ] Understand that objects give out or reflect light to be seen.<br>[ ] Explain how eyes process light to see.<br>[ ] Consider how our pupils help us see in the dark. | [ ] Explore how a periscope works.<br>[ ] Understand how a periscope uses light rays.<br>[ ] Explain how a periscope proves light travels in a straight line.<br>[ ] Predict how water may change the way light travels. | [ ] Explore ideas about light.<br>[ ] Consider several lines of enquiry.<br>[ ] Justify final chosen methods.<br>[ ] Use prior experiences to influence decisions. | [ ] Make a prediction.<br>[ ] Consider key information when making predictions.<br>[ ] Use information to explain predictions.<br>[ ] Justify why alternative predictions aren't viable. | [ ] Ensure the variable is controlled.<br>[ ] Ensure constant variables are maintained.<br>[ ] Repeat test accurately to confirm results.<br>[ ] Predict how changing a different variable would impact results. | [ ] Choose a single method to communicate your findings.<br>[ ] Choose a combination of pictorial and written methods of reporting.<br>[ ] Evaluate the degree of trust in your results and consider how to improve this.<br>[ ] Justify chosen methods of recording. |
| optic nerve<br>reflect | periscope<br>light rays | spectrum<br>phenomena | viable | constant variable | consensus<br>reproducibility |
| Comparative test<br><br>Go outside and measure shadows | | | | | |
| **Writing Across the Curriculum** | Wk 2 ~ PROCEDURES Use procedures to demonstrate how a periscope works and how it shows that light travels in a straight line. | | | | |