

Year 3 Science coverage

|           | Discover  |  | Explore  |  | Belong   |
|-----------|---|--|--|--|--|
|           | Rocks   | Light  | Animals Inc Humans   | Plants   | Forces and Magnets   |
| Knowledge | <ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>recognise that soils are made from rocks and organic matter</li> </ul> <p><b>KEY AREAS:</b></p> <ul style="list-style-type: none"> <li><b>Compare and group rocks based on their appearance and physical properties, giving reasons.</b></li> <li><b>Know how soil is made and how fossils are formed.</b></li> <li><b>Know about and explain the difference between sedimentary, metamorphic and igneous rock.</b></li> </ul> | <ul style="list-style-type: none"> <li>recognise that they need light in order to see things and that dark is the absence of light</li> <li>notice that light is reflected from surfaces</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>find patterns in the way that the size of shadows change</li> </ul> <p><b>KEY AREAS:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Know that dark is the absence of light.</b></li> <li>➤ <b>Know that light is needed in order to see and is reflected from a surface.</b></li> <li>➤ <b>Know and demonstrate how a shadow is formed and explain how a shadow changes shape.</b></li> <li>➤ <b>Know about the danger of direct sunlight and describe how to keep protected.</b></li> </ul> | <ul style="list-style-type: none"> <li>identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> <li>identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul> <p><b>KEY AREAS:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Know about the importance of a nutritious, balanced diet.</b></li> <li>➤ <b>Know how nutrients, water and oxygen are transported within animals and humans.</b></li> <li>➤ <b>Know about the skeletal and muscular system of a human.</b></li> </ul> <p><b>Prior knowledge: children should be able to notice that animals, including humans, have offspring which grow into adults. Describe the basic needs of animals, including humans, for survival.</b></p> | <ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul> <p><b>KEY AREAS:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Know the function of different parts of flowering plants and trees.</b></li> <li>➤ <b>Know how water is transported within plants.</b></li> <li>➤ <b>Know the plant life cycle, especially the importance of flowers.</b></li> </ul> <p><b>Prior knowledge: children should be able to observe and describe how seeds and bulbs grow into mature plants. Describe how plants need water, light and a suitable temperature to grow and stay healthy.</b></p> | <ul style="list-style-type: none"> <li>compare how things move on different surfaces</li> <li>notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>observe how magnets attract or repel each other and attract some materials and not others</li> <li>compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li> <li>describe magnets as having 2 poles</li> <li>predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul> <p><b>KEY AREAS:</b></p> <ul style="list-style-type: none"> <li>➤ <b>Know about and describe how objects move on different surfaces.</b></li> <li>➤ <b>Know how a simple pulley works and use to on to lift an object.</b></li> <li>➤ <b>Know how some forces require contact and some do not, giving examples.</b></li> <li>➤ <b>Know about and explain how magnets attract and repel Predict whether magnets will attract</b></li> </ul> |

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|                               |   |   | <b>Describe the importance for humans of exercise, healthy eating and hygiene.</b>   |  | <b>or repel and give a reason.</b>   |
| Key Vocabulary                | <i>animals, classification, extinct, fossils, imprint, minerals, paleontologist, plants, preserve, process, rocks, sedimentary, sediments, drainage, mineral, particles, permeable, non-permeable, sand, soil, types of rocks, types of soil</i>  | <i>shadow, shape, light, similar, shadow, shape, light, transparent, opaque, light source, block, Sun, direction, changes, light travels, object, shortest, daytime, longest, highest, torch</i>  | <i>Feed, feeding, growth, vegetables, diet, meat, Fish, sugars, starches, fruits, Fats, healthy, food, groups, balanced, varied, nutrition, evidence, conclusion, Skeleton, muscles, support, movement, growth, muscle groups, bones, support, attached, ribs. Spine, joints, skull, exercise, contract, rest, vertebrate, relax, contract, contraction</i>  | <i>Plants, grow, yellow, soil, pale, warmth, thin, change, spindly, reliable, Healthy, evidence, light, leaves, roots, stem, trunk, flowers, water, carbon dioxide, water, nutrients, room, fertilizer, flowering plants, seed formation, seed dispersal, water transportation,</i>  | <i>Force, non-magnetic, magnet, attraction, repulsion, size, metal, iron, copper aluminium, attract, repel, magnetic, direction, push, pull, balanced, unbalanced</i>  |
| Linked scientist              | <b>Meeman Chang<br/>Mary Anning</b>   | <b>Ibn al-Haytham</b>   | <b>Sylvia Earle</b>  | <b>Dr Segenet Kelemu</b>   | <b>Shen Kuo<br/>William Gilbert</b>  |
| Thinking Scientifically Ideas | <ul style="list-style-type: none"> <li>observing rocks and exploring how they might change over time - use magnifying glasses.</li> <li>identify and classify rocks according to grains/crystals/fossils</li> <li>Research and discuss different kinds of living things whose fossils are found in sedimentary rock.</li> <li>Explore how fossils are formed.</li> <li>Explore different soils and identify similarities and</li> </ul> | <ul style="list-style-type: none"> <li>Play mirror games to help answer questions about how light behaves.</li> <li>look for patterns in what happens to shadows when the light source moves or the distance between the object and the light source</li> </ul> | <ul style="list-style-type: none"> <li>Identify and group animals with and without skeletons and compare and observe their movements.</li> <li>explore ideas about what would happen if humans did not have skeletons.</li> <li>compare and contrast the diets of different animals.</li> <li>Group animals according to what they eat.</li> <li>Research food groups and find out how they keep us healthy and design meals from this.</li> </ul> | <ul style="list-style-type: none"> <li>compare the effect of different factors on plant growth. E.g. the amount of light/fertiliser.</li> <li>Discovering how seeds are formed by making observations of different plant life cycles over a period of time.</li> <li>looking for patterns in the structure of fruits that relate to how the seeds are dispersed.</li> <li>observing how water is transported in plants. Observing how water travels up the stem to flowers - celery/white carnations and coloured water</li> </ul> | <ul style="list-style-type: none"> <li>comparing how different things move and grouping them.</li> <li>raising questions and carrying out tests to find out how far things move on different surfaces.</li> <li>gathering and recording data to find answers to their questions.</li> <li>explore the strengths of different magnets and find a fair way to compare them.</li> <li>sort magnetic and non-magnetic materials; looking for patterns in the way that</li> </ul> |

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|  | <p>differences between them.</p> <ul style="list-style-type: none"><li>• Investigate what happens when rocks are rubbed together or how they change in water.</li><li>• Raise and answer questions about the way soils are formed.</li></ul> |  |  |  | <p>magnets behave in relation to each other and what might affect this.</p> <ul style="list-style-type: none"><li>• identify how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.</li></ul> |
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| Year Group 3   | Suggested Assessment Activity(ies)   |
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| <p><b>Rocks</b></p> <ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>recognise that soils are made from rocks and organic matter</li> </ul>  | <ul style="list-style-type: none"> <li>*Venn diagram/pictures/Q&amp;A</li> <li>*Informative poster</li> </ul>  |
| <p><b>Light</b></p> <ul style="list-style-type: none"> <li>recognise that they need light in order to see things and that dark is the absence of light</li> <li>notice that light is reflected from surfaces</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>find patterns in the way that the size of shadows change</li> </ul>   | <ul style="list-style-type: none"> <li>*Plan an expedition into a cave; rucsac-what would you need? (Pack a bag)</li> <li>*Discuss common light objects</li> <li>*Mirror challenge-use light/lazer to light none reflective objects or 'Mirror maze'</li> <li>*Compare reflective/non-reflective surfaces</li> <li>*Eclipse/sun safety poster</li> <li>*Make shadow puppets-discuss effects (Link to topic/literacy focus)</li> <li>*Explore silhouettes/shadow puppets/objects in light box</li> <li>*Shadows outside-draw with chalk-discuss/compare over time</li> <li>*Photo match to objects-compare position in relation to light source (shape)</li> </ul>  |
| <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul> | <ul style="list-style-type: none"> <li>*Matching games (part to name/function)</li> <li>*Labelling diagram</li> <li>*Key word cards/vocabulary linked to games e.g taboo, the clock game, crosswords/wordsearches, word treasure hunts with clues (Children could make own games linked to this)</li> <li>*Dye activities with celery/cabbage etc-discuss observations made on paper strips-see how dye travels up different types of paper (linked to fair test)</li> <li>*Sequence and explain pictures linked to plant life cycle. Re-order mixed up pictures</li> <li>*Create plant life cycle animation/flip book/online books on ipad with written/audio narration</li> <li>*'Thinking tub' with pictures of related objects (seeds, picture of sun, flower, bee, bird etc' to elicit understanding of relationships, sequence related to life cycles etc.</li> <li>*Plant puzzle and explain</li> </ul> |
| <p><b>Animals including humans</b></p>   | <ul style="list-style-type: none"> <li>*Healthy eating/nutrition poster/presentation/talk</li> <li>*loop cards</li> </ul>  |

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| <ul style="list-style-type: none"><li>• identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li><li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement</li></ul>  | <ul style="list-style-type: none"><li>*Create skeleton model-discuss/explain purpose</li><li>*Create 'dog biscuit'/straws skeletons and discuss parts/purposes</li><li>*Create a body flip book/e-books</li><li>*Loop cards/quiz/body map (captions/labels/functions)</li></ul> |
| <p><b>Forces and Magnets</b></p> <ul style="list-style-type: none"><li>• notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li><li>• observe how magnets attract or repel each other and attract some materials and not others</li><li>• compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</li><li>• describe magnets as having 2 poles</li><li>• predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li></ul> | <ul style="list-style-type: none"><li>*Sorting boxes</li><li>*Testing objects</li><li>*Sort and grouping materials-labelling images with materials</li><li>*Magnet cards-matching and discuss</li></ul>   |

## Ipad ideas for science

- ❖ Use of Hologo (AR app)
- ❖ Google Expeditions (science AR)
- ❖ Keynote animation of scientific concept (water cycle, forces, magnets, circuit)
- ❖ Use of numbers app to show data/results
- ❖ Using time-lapse to record plants growing
- ❖ 'Bug Hunt Bingo' on keynote
- ❖ Create a quiz on keynote
- ❖ Screen shot and narrate over the top (using screen record)
- ❖ Record selfie facts about a scientific concept
- ❖ Use of slo-mo function on camera (e.g. to show forces)
- ❖ Narrate over AR (using screen record)
- ❖ Using pages app to keep a journal of learning
- ❖ Use of Green screen (scientific report)
- ❖ Using Chatterpix - to share facts learned
- ❖ Photo journal