| Science Unit of Work<br>Year 3 | | | |
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| **Unit** | **Prior learning (Retrieval)** | **Future learning** | **Common Misconceptions** |
| Animals including Humans<br>  | • Know animals have offspring which grow into adults<br>• Know the basic needs animals need to survive (water, food and air).<br>• Know the importance of exercise for humans<br>• Know the importance of eating a balanced diet (carbohydrates, fruit and vegetables, protein, fats and dairy).<br>• Know and name a variety of animals including a fish, amphibian (frog), reptile (snake), bird and mammal (dog, cat, human). | • Know the names of the different parts of the digestive system in humans. (mouth, tongue, teeth, oesophagus, stomach, and small and large intestine)<br>• Know the functions of the different parts of the digestive system in humans. (mouth, tongue, teeth, oesophagus, stomach, and small and large intestine)<br>• Know the names of the different teeth in humans. (Incisors, molars and canines)<br>• Know the functions of the different teeth in humans. (Incisors, molars and canines)<br>• Know how to use a food chain and identify the producers, predators and prey) | • Some children may only think of bones they have seen in museums, and so think of bones as being dead rather than living.<br>• Protein is good for you, so you can eat as much as you want.<br>• Invertebrates have no form of skeleton. |
| **National Curriculum Subject Content:** | • 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<br>• Identify that humans and some other animals have skeletons and muscles for support, protection and movement | | |

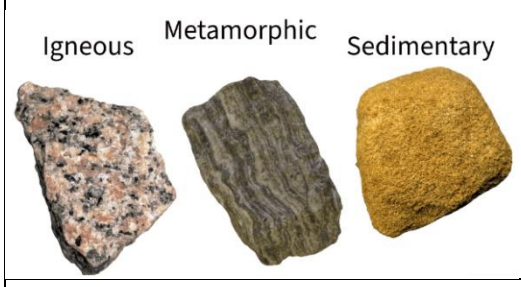
| **Knowledge:** | | | **Key Vocabulary** |
|---|---|---|---|
| **Intended Knowledge Substantive** | 1) Know that animals, including humans, need the right types and amount of nutrition.<br>2) Know that animals, including humans cannot make their own food.<br>3) Know that animals, including humans get their nutrition from what they eat.<br>4) Know that humans and some other animals (cats, dogs, fish and birds) have skeletons.<br>5) Know that humans and some other animals (cats, dogs, fish and birds) have muscles.<br>6) Know the functions of the skeleton and muscles (support, protection and movement) | | muscles, nutrients, protein, vertebrate, invertebrate, vertebra, tendons, vitamins and minerals. |
| **Working Scientifically:** | **Enquiry** | **Working Scientifically Objectives** | **Working Scientifically Vocabulary** |
| **Disciplinary Knowledge:** | Pattern Seeking - Look at the skeletons of different animals and see what is the same and what is different about them. (Draw and label diagrams/drawings of what they have found)<br><br>Comparative Testing – | • Make systematic and careful observations.<br>• Record my findings using simple scientific language, drawings and labelled diagrams.<br>• Identify differences, similarities or changes related to simple scientific ideas and processes. | Compare, group, same, different, |
| **Assessment Outcomes** | Substantive<br>• I know that animals including humans need the right types and amount of nutrition.<br>• I know that animals, including humans, cannot make their own food, they get nutrition from what they eat.<br>• I know that humans and some other animals have skeletons and muscles for support, protection and movement. | | Disciplinary<br>I can make systematic and careful observations.<br>I can record my findings using simple scientific language, drawings and labelled diagrams.<br>I can identify similarities and differences related to simple scientific ideas and processes. |
| **Significant people/places** | | | |

| Science Unit of Work<br>Year 3 | | | |
|---|---|---|---|
| **Unit** | **Prior learning (Retrieval)** | **Future learning** | **Common Misconceptions** |
| Forces and Magnets<br>  | • Experience of the movement of different objects over different surfaces.<br>• Experience of magnets | • Know that unsupported objects fall towards the Earth because of gravity<br>• Know the effects of air resistance that act between moving objects.<br>• Know the effects of water resistance that act between moving objects.<br>• Know the effects of friction that act between moving objects.<br>• Know how levers, pulleys and gears allow a smaller force to have greater effect. | • All metals are magnetic<br>• The bigger the magnet, the stronger it is.<br>• Movement stops when things run out of 'push'<br>• Smooth surfaces have no friction<br>• Objects always travel better on smooth surfaces.<br>• A non-moving object has no forces acting on it. |
| **National Curriculum Subject Content:** | • Compare how things move on different surfaces<br>• Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance<br>• Observe how magnets attract or repel each other and attract some materials and not others.<br>• 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<br>• Describe magnets as having 2 poles<br>• Predict whether two magnets will attract or repel based on which poles are facing. | | |
| **Knowledge:** | | | **Key Vocabulary** |
| **Intended Knowledge Substantive** | 1) Know about and describe how objects move on different surfaces.<br>2) Know that some forces need contact between two objects.<br>3) Know that magnets have two poles<br>4) Know about and explain how magnets attract and repel<br>5) Know that magnetic forces can act at a distance.<br>6) Know some magnetic materials and can explain if a material will be attracted to a magnet or not. | | Attract, contact force, iron, magnet, magnetic force, non-contact force, North pole, poles, repel, South pole, steel. |
| **Working Scientifically:** | **Enquiry** | **Working Scientifically Objectives** | **Working Scientifically Vocabulary** |
| **Disciplinary Knowledge:** | Observation:<br>• Predict whether magnets will attract or repel and give a reason.<br>• Observe how magnets attract or repel each other<br>• Observe how magnets attract some materials and not others<br>Classify and group:<br>• 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 | • Record findings using simple scientific language and labelled drawings.<br>• Report on findings from enquiries.<br>• Use results to draw simple conclusions<br>• Use straightforward scientific evidence to answer questions. | • Attract, repel, predict, conclude, findings |
| **Assessment Outcomes** | Substantive<br>• I know about and describe how objects move on different surfaces.<br>• I know that some forces need contact between two objects.<br>• I know that magnets have two poles<br>• I know about and explain how magnets attract and repel<br>• I know that magnetic forces can act at a distance.<br>• I know some magnetic materials and can explain if a material will be attracted to a magnet or not. | | Disciplinary<br>I can predict whether magnets will attract or repel and give reasons<br>I can observe how magnets attract or repel each other<br>I can observe how magnets attract some materials and not others<br>I can compare and group together a variety of everyday materials based on if they are magnetic or not. |
| **Significant people/places** | | | |

| Science Unit of Work<br>Year 3 | | | |
|---|---|---|---|
| **Unit** | **Prior learning (Retrieval)** | **Future learning** | **Common Misconceptions** |
| Light<br>  | • Know that dark is the absence of light<br>• Know that it is dangerous to look directly at the sun<br>• Know that glasses help people see better.<br>• Describe what they can see outside<br>• Know basic parts of the body | • Know how light travels<br>• Know and demonstrate how we see objects<br>• Know why shadows have the same shape as the object that casts them.<br>• Know how simple optical instruments work eg periscope, telescope, binoculars, mirrors etc. | • We can still see even where there is an absence of any light<br>• Our eyes 'get used to' the dark<br>• The moon and reflective surfaces are light sources<br>• A transparent object is a light source<br>• Shadows contain details of the object, such as facial features on their own shadow<br>• Shadows result from objects giving off darkness |
| **National Curriculum Subject Content:** | • Recognise that they need light in order to see things and that dark is the absence of light<br>• Notice that light is reflected from surfaces<br>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes<br>• Recognise that shadows are formed when the light from a light source is blocked by an opaque object<br>• Find patterns in the way that the size of shadows change | | |
| **Knowledge:** | | | **Key Vocabulary** |
| **Intended Knowledge Substantive** | 1) Know that we need light in order to see things<br>2) Know that dark is the absence of light.<br>3) Know that light is reflected from surfaces.<br>4) Know that light from the sun can be dangerous and know ways to protect our eyes.<br>5) Know that shadows are formed when light from a light source is blocked by an opaque object.<br>6) Know how and why shadows change shape.<br>7) Know and name opaque, translucent and transparent objects. | | shadow, reflect, mirror, transparent, translucent, opaque, dark, light, light source |
| **Working Scientifically:** | **Enquiry** | **Working Scientifically Objectives** | **Working Scientifically Vocabulary** |
| **Disciplinary Knowledge:** | Pattern Seeking<br>Look for **patterns** and **investigate** what happens to shadows when the light source moves or the distance between the light source and the object changes.<br>Comparative Testing<br>**Compare** the reflective properties of different materials.<br>**Compare** opaque, translucent and transparent materials in relation to shadow. | • I can gather, record and present data in a table<br>• I can use results to draw simple conclusions<br>• I can report on findings from enquiries<br>• I can present my findings<br>• I can classify materials<br>• I can set up a comparative test<br>• I can ask relevant questions | • pattern seeking, fair test, predict, conclude, compare. |
| **Assessment Outcomes** | Substantive<br>• I know that we need light in order to see<br>• I know that light is reflected from surfaces<br>• I know that light from the sun can be dangerous.<br>• I know ways to protect ourselves from the sun.<br>• I know that shadows are formed when light is blocked by an opaque object<br>• I know how and why shadows change shape.<br>• I know and can name opaque, translucent and transparent objects. | | Disciplinary<br>• I can predict and draw conclusions based on ideas they have learnt.<br>• I can report scientific changes related to simple scientific ideas and processes |
| **Significant people/places** | | | |

| Science Unit of Work<br>Year 3 | | | |
|---|---|---|---|
| **Unit** | **Prior learning (Retrieval)** | **Future learning** | **Common Misconceptions** |
| Plants<br>  | • Know and name the petals, stem, leaves and roots of a plant.<br>• Know and name the roots, trunk, branches and leaves of a tree.<br>• Know the difference between deciduous and evergreen trees.<br>• Know the names of common garden plants- vegetables, daffodils, sunflower and poppy.<br>• Know the name of common wild plants- dandelion, daisy, buttercup and nettle.<br>• Know and explain how seeds and bulbs grow into plants<br>• Know what plants need in order to grow and stay healthy (water, light and suitable temperature).<br>• Know the requirements for germination.<br>• Know how plants can reproduce. | • Know the process of reproduction in plants.<br>• Know the equation for photosynthesis and use it to identify factors needed for plant growth. | • Plants are flowering plants grown in pots.<br>• Plants are not alive.<br>• Trees are not plants<br>• All stems are green<br>• Minerals in *the* soil, water and carbon dioxide are food for *plants*<br>• *All plants start as seeds.* |
| **National Curriculum Subject Content:** | • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers<br>• 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<br>• Investigate the way in which water is transported within plants<br>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal | | |
| **Knowledge:** | | | **Key Vocabulary** |
| **Intended Knowledge Substantive** | 1) Know and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.<br>2) Know the requirements for plant life and growth (air, light, water, nutrients and room to grow).<br>3) Know that the requirements for plant life and growth vary from plant to plant.<br>4) Know and explain the life cycle of a plant.<br>5) Know the part that flowers play in the life cycle of a plant including pollination, seed formation and seed dispersal. | | bulb, flower, germination, life cycle, nutrients, pollination, root, seed, seed dispersal, transpiration, photosynthesis |
| **Working Scientifically:** | **Enquiry** | **Working Scientifically Objectives** | **Working Scientifically Vocabulary** |
| **Disciplinary Knowledge:** | • Explore how water is transported within plants.<br>• Compare the effective of different factors on plant growth eg amount of light.<br>• Draw and label the parts of a flowering plant and their role. | • Record findings using simple scientific language, labelled diagrams.<br>• Set up a simple fair test enquiry.<br>• Draw simple conclusions and use some scientific language to record what they have found out.<br>• Gather and record data in a table. | • Record, predict, conclude, fair test, enquiry. |
| **Assessment Outcomes** | Substantive<br>I know the functions of different parts of a flowering plant.<br>I know the requirements for plant growth<br>I know that the requirements for plant growth vary from plant to plant<br>I know the part that flowers play in the life cycle of a plant. | | Disciplinary<br><br>I can explore how water is transported in plants.<br>I can draw and label the parts of a flowering plant and their role.<br>I can compare the effective of different factors on plant growth. |
| **Significant people/places** | Jane Colden- American botanist | | |

**Science Unit of Work**
**Year 3**

| Unit | Prior learning (Retrieval) | Future learning | Common Misconceptions |
|---|---|---|---|
| Rocks<br>  <br> | • Know that rocks and stones are materials.<br>• Know what soil is | • Group materials based on if they are solid, liquid or gas.<br>• Compare and group materials based on their properties<br>• Know and demonstrate how some materials can be separated. | • Only fabric is a material<br>• Solid is another word for hard<br>• Rock describes an object not a material |
| **National Curriculum Subject Content:** | • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties<br>• Describe in simple terms how fossils are formed when things that have lived are trapped within rock<br>• Recognise that soils are made from rocks and organic matter | | |
| **Knowledge:** | | | **Key Vocabulary** |
| **Intended Knowledge Substantive** | 1) Know how soil is made<br>2) Know how fossils are formed<br>3) Know about and explain the properties of sedimentary, metamorphic and igneous rocks.<br>4) Know and explain difference between sedimentary, metamorphic and igneous rocks. | | Absorbent, crystals, fossils, grains, igneous metamorphic, peat, pebble, impermeable/ permeable, sedimentary, soil, |
| **Working Scientifically:** | **Enquiry** | **Working Scientifically Objectives** | **Working Scientifically Vocabulary** |
| **Disciplinary Knowledge:** | • Compare and group rocks based on their appearances and physical properties.<br>• Observe rocks and explain how they have changed over time.<br>• Research the different kinds of living things whose fossils are found in sedimentary rock. | • Make systematic and careful observations<br>• Gather, record, classify and present data in a variety of ways to help answering questions.<br>• Use straightforward scientific evidence to answer questions or support findings. | Observation, classification, evidence, findings. |
| **Assessment Outcomes** | Substantive<br>I know how soil is made.<br>I know how fossils are formed.<br>I know and can talk about properties of sedimentary rock.<br>I know and can talk about properties of igneous rock.<br>I know and can talk about properties of metamorphic rock.<br>I know and can explain the differences between sedimentary, metamorphic and igneous rock. | | Disciplinary<br>I can compare and group rocks based on their appearances.<br>I can justify and give reasons for how they have grouped different rocks.<br>I can explain how rocks have changed over time and give reasons. |
| **Significant people/places** | | | |