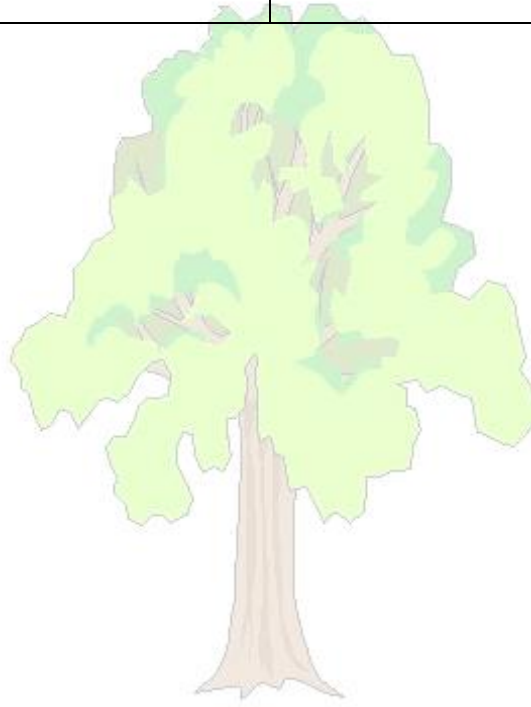


### Year 3 Science Long Term Plan

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
What am I made of? Animals Including Humans	What are magnets and how can they be useful? Forces and Magnets	What is our planet made of? Rocks	What nutrition do animals and humans need to eat? Animals Including humans	What do the parts of a plant actually do? Plants	What is light and how can we change the shape of shadows? Light



## Year 3 Science Medium Term Plan

Term 1 Science enquiry- What am I made of?		
National Curriculum Links	Key Vocabulary	Pupil Offer
<b>Science- Animals Including Humans</b> Pupils should be taught to- <ul style="list-style-type: none"> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>	support, protection, movement, skull, rib cage, clavicle, sternum, humerus, radius, ulna, spine(vertebrae), pelvis, femur, patella, tibia, fibula, calcium, vertebrates, invertebrates, skeleton, exoskeleton, brain, lungs, heart, spinal cord, muscles, contract, joints.	Scavenger hunt for different living things on school grounds.

	Week 1	Week 2	Week 3	Week 4	Week 5
Lesson Overview including Substantive knowledge	<p><b>Year 1 Retrieval</b></p> <p>Pupils have learnt the basic parts of the human body and about the senses.</p> <p><b>What is a skeleton?</b></p> <p>Pupils are to complete a cold task and draw a picture of what they think their own skeleton looks like. They will then generate explanations as to why we need a skeleton.</p> <p><b>What would happen to our bodies if we did not have bones?</b></p> <p>Pupils to work in groups to understand that bones are essential for support and movement and propose what we would look like without any bones.</p> <p>Provide pupils with example of correctly labelled skeleton and introduce new vocabulary of names of bones.</p>	<p><b>Classification</b></p> <p><b>Which bones in our bodies protect something?</b></p> <p>Retrieve information on names for bones from previous lesson.</p> <p>Pupils to arrange cards with bones on into two different categories. Bones needed for support/movement and bones needed for protection.</p> <p>Are there any bones that fit into both categories? (Spine and rib cage)</p>	<p><b>Classification</b></p> <p><b>Do all animals have a skeleton?</b></p> <p>Pupils to use school grounds to identify as many different animals as they can including minibeasts.</p> <p>Pupils come together and create list of animals that they saw.</p> <p>Explain that no all animals have skeletons like us and some do not have skeletons at all.</p> <p>Introduce the terms vertebrate, invertebrate, skeleton and exoskeleton.</p> <p>Children to rearrange the class list into sub-divisions of vertebrates and invertebrates.</p>	<p><b>How do muscles work?</b></p> <p>Pupils watch short clip (BBC teach) about how muscles work using the term 'contract' to explain that the muscles get shorter.</p> <p>Pupils to feel muscles in their own arms and notice how triceps and biceps work together to move their arms at the elbow joint.</p> <p>Pupils then will produce their own diagrams with explanations to show how arm muscles move our arms at the elbow joint.</p>	<p><b>Retrieval- BIG QUESTION</b></p> <p>Why do humans have skeletons?</p> <p>Revisit the names of the bones in our skeletons and talk about the function of the muscles in our bodies.</p> <p>Pupils to complete assessment task to describe the three main functions of our bones:</p> <ul style="list-style-type: none"> <li>- Support</li> <li>- Protection</li> <li>- Movement</li> </ul>
Working Scientifically		Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Identifying differences, similarities or changes related to simple scientific ideas and processes.	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	
Organisation & Communication	Drawings with labelled skeletons and then individual written responses to second question.	Pupils produce a simple Venn diagram to show their understanding of the different functions of the bones.	Pupils group their animal lists into vertebrate and invertebrate categories and then use their findings to complete simple sentence stems.	Labelled drawing with brief explanations.	.Completed assessment sheets.
Famous People					

## Term 2 Science enquiry- What are magnets and how can they be useful?

National Curriculum Links	Key Vocabulary	Pupil Offer
<b>Science- Forces and magnets</b> <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>	Force Magnetic, Non-magnetic Pole, North, South Sliding friction Elastic Resist, Attraction, Repulsion. attract, repel	Design a magnetic game

	Week 1	Week 2	Week 3	Week 4	Week 5
Lesson Overview including Substantive knowledge	<b>Comparative/Fair Testing</b> In this lesson, pupils will be introduced to friction and theorise how the world would be different if we didn't have the force of friction  Pupils will carry out their own investigation using ramps covered in different materials, predicting which would allow the car to travel the greatest distance.  Pupils will record how far the car travels on different surfaces.	<b>Classification</b> Pupils will use a range of magnets. They will explore the materials around them and group together those which are attracted to a magnet and those which aren't.  Pupils will need to record their findings and then use their findings to notice patterns in their results.	<b>Comparative/Fair Testing</b> Pupils are to complete two practical investigations to prove that magnetic forces act at a distance. (Showing that magnets still attract to each other through materials such as paper, cloth, etc and that a paperclip chain can be made using magnetic forces without all of the paperclips needing to touch the magnet.)  They will initially be provided with the resources that they need but will then need to think in groups how they can use the resources to show that magnetic forces act a distance.	<b>KS1 Geography Retrieval</b> Pupils have learnt about, and located the North and South Pole.  Pupils are to be introduced to a magnets north and south poles referencing Earth is a huge magnet that also has a north and south pole.  Pupils are to observe what happens when opposite poles are near to each other and when two of the same poles are near to each other. They will also think of attraction as a pulling force and repulsion as a pushing force.	<b>Big Question Retrieval</b>  <b>What are magnets?</b> Pupils to write their own definitions and add to Science working wall.  <b>How can magnets be useful?</b> Pupils will be provided with lots of different ways that magnets are useful to us in modern life. They will then be challenged to show that magnets are useful by designing and building their own game that uses magnets. Pupils will be given 3 different ideas that they could use to make a racing game/fishing game/maze game.
Working Scientifically	Setting up simple practical enquiries, comparative and fair tests.	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Setting up simple practical enquiries, comparative and fair tests	Prediction  Recording findings using simple scientific language, drawings, pictures, labelled diagrams (Venn or Carroll), keys, bar charts, and tables	Using straightforward scientific evidence to answer questions or to support their findings
Organisation & Communication	Pupils to complete recording sheet to record their prediction, findings and interpretation of the results from the investigation.	Pupils will record their findings in a table and then draw conclusions from their findings.	Pupils to complete scientific drawings to show how they proved that magnetic forces act a distance.	Pupils are to demonstrate their understanding of poles and predict whether two poles will attract or repel each other by drawing their predictions.	.Pupils produce their own definition of a magnet using scientific vocabulary and then design and build a magnetic game to prove that magnets are useful.
Famous People					

## Term 3 Science enquiry- What is our planet made of?

National Curriculum Links	Key Vocabulary	Pupil Offer
<b>Science- Rocks</b> <b>Pupils should be taught to-</b> <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>	rocks, crystals, fossils permeability, durability fragment weathering, erosion, wind, rain, water sediment, soil, organic matter	Making fossils

	Week 1	Week 2	Week 3	Week 4	Week 5
<b>Lesson Overview including Substantive knowledge</b>	<p><b>What differences are there between different rocks?</b></p> <p><b>Classification</b></p> <p>In this lesson, pupils will look at a large selection of different rocks. They will think about each rocks physical properties using magnifying glasses to look in detail. Pupils will work in groups to think of different ways to describe the properties of the rocks that they are given.</p> <p><b>Comparative</b></p> <p>At this point pupils will test specific properties such as permeability and durability.</p>	<p><b>Comparative</b></p> <p><b>Do rocks ever change?</b></p> <p>Pupils will consider how rocks change over long periods of time. Pupils will look around the school grounds for evidence of weathering of rocks perhaps on building materials.</p> <p>Working in small groups, they will find their own collection of stones from around the school grounds initially and then place their stones inside a plastic tub with water in it. They will then replicate weathering by shaking their stones in the tub to see if they can change the appearance of their stones.</p>	<p><b>What are fossils?</b></p> <p>Pupils will learn the basic process of a fossil being formed which will include the following:</p> <ol style="list-style-type: none"> <li>Fossils are made after a plant or animal gets buried by layers of rock.</li> <li>Over time, the plant or animal remains are washed away, leaving a mould in the shape of the animal behind.</li> <li>Over even more time, this mould gets filled with bits of rock.</li> <li>Eventually the fossil is formed and due to weathering and erosion (as covered in previous sessions) the fossils can be found on the surface.</li> </ol> <p>Show pupils an example of an lcthyosaur fossils like those found by Mary Anning. Briefly discuss the importance of her findings.</p> <p>Explain that we are going to make our own versions of fossils using clay and toy dinosaurs to make a mould.</p>	<p><b>What are fossils?</b></p> <p>Pupils observe the fossils that they had made in the previous lesson. Pupils are reminded how a fossil is made.</p> <p><b>Big Question Retrieval</b></p> <p>They will then work in small groups to write an explanation with scientific drawings to explain how fossils are made.</p>	<p><b>What is soil?</b></p> <p>Identify what pupils think soil is made of.</p> <p>Ensure that pupils know that soil is made of bits of rock and organic matter.</p> <p><b>Observing Over Time</b></p> <p>Pupils will then complete a simple investigation into different soil types. They will take soil samples from around the school grounds and also using the soil samples from our science resources. They will mix their soils with water in plastic bottles and then observe how different parts of the soil make different layers.</p>
<b>Working Scientifically</b>	<i>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</i>	<i>Identifying differences, similarities or changes related to simple scientific ideas and processes</i>		<i>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</i>	<i>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</i>
<b>Organisation &amp; Communication</b>	Pupils will describe the properties of each rock that they are given.	Pupils will describe their simple practical experiments and draw the results of their artificial weathering.	Children produce their own fossils	Children present their explanations of fossils to the rest of the class.	.Pupils identify the soil type that we have round the school grounds and complete sentence stems to show that they know what soil is made of.
<b>Famous People</b>	William Smith		Mary Anning		

## Term 4 Science enquiry- What nutrition do animals and humans need to eat?

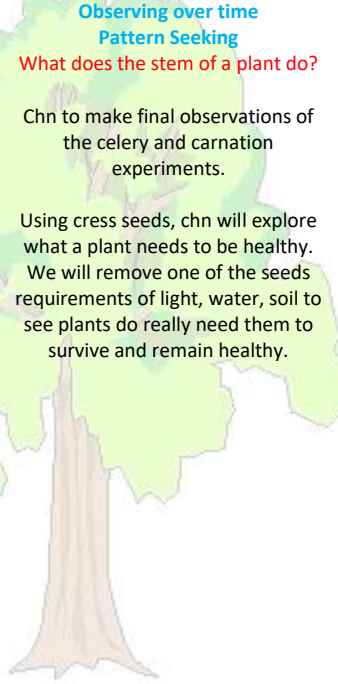
National Curriculum Links	Key Vocabulary	Pupil Offer
<b>Science- Animals Including Humans</b> Pupils should be taught to- <ul style="list-style-type: none"> <li>identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li> </ul>	fats, sugars, carbohydrates, protein, dairy, vitamins, minerals	

	Week 1	Week 2	Week 3	Week 4	Week 5
Lesson Overview including Substantive knowledge	<p><b>KS1 Retrieval</b></p> <p>Retrieval of year 2 vocabulary of omnivore, carnivore and herbivore using active grouping game.</p> <p>In this lesson, pupils will consider how animals and humans need to get their nutrition from plants and other animals while plants are able to make their own food.</p> <p>They will organise a range of plants and animals into simple food chains that show where each organism gets their nutrition.</p>	<p>Pupils will consider the amount of food that particular animals need in their diet.</p> <p>Pupils will look at the diet of extreme examples of carnivores and herbivores and draw conclusions.</p> <p>Pupils should notice that herbivores need to eat a lot and often in order to remain healthy whereas a carnivore does not need to eat as often to remain healthy.</p>	<p><b>Classification</b></p> <p>In this lesson, pupils will understand the 5 food groups and the proportions of each needed to create a healthy, balanced diet.</p> <p>They will know the nutritional properties of carbohydrates, fruit and vegetables, proteins and dairy foods as well as importance of limiting fat and sugar intake.</p> <p>Pupils will have a range of pictures of different types of food and they will then need to group them together into the correct food groups.</p>	<p><b>Researching</b></p> <p>Pupils will explore the nutritional values of different foods by gathering information from food labels. They will collect food packaging prior to the lesson.</p> <p><b>Pattern Seeking</b></p> <p>Pupils will then use the food labels to investigate a list of statements that they are provided with. For example, 'All foods that are high in fat are also high in salt content'.</p> <p>Pupils will need to try to either prove or disprove each statement.</p>	<p><b>Big Question Retrieval</b></p> <p>Pupils are to consider a human's nutritional needs and design a dish for themselves.</p> <p>They must try to include all 5 major food groups and be able to explain their reasons behind their food selections.</p>
Working Scientifically		<p><i>Using results to draw simple conclusions, make predictions for new values, suggesting improvements and raise further questions</i></p>		<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	
Organisation & Communication	<p>Pupils complete simple food chains to show where plants, animals and humans get their nutrition.</p>	<p>Pupils complete sentence stems to show understanding that different animals require different nutrition.</p>	<p>Create a collage of an Eat well Plate in groups by sorting foods into categories</p>	<p>Examples that prove statements are true or false to be written in their books.</p>	<p>Design a nutritious meal for themselves.</p>
Famous People					



## Term 5 Science enquiry- What do the parts of a plant actually do?

National Curriculum Links	Key Vocabulary	Pupil Offer
<b>Science- Plants</b> Pupils should be taught to- <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>	light, dark roots, stem, leaves, flower, seed anchor, absorb nutrients, nutrition, water growth, dispersal, pollination, nectar, pollen	Observation of growth of plants over time.

	Week 1	Week 2	Week 3	Week 4	Week 5
<b>Lesson Overview including Substantive knowledge</b>	<p><b>Year 1 Retrieval</b></p> <p>Pupils have previously learnt, and identified, the basic structure of flowering plants</p> <p><b>Researching</b></p> <p><b>Why do plants need roots?</b></p> <p>Chn to find weeds in the school grounds and bring back to the classroom for observation. Draw attention to the fact that it is tricky to pull them out of the ground and link it to the first function of a root, which is to anchor the plant in the ground. Using magnifying glasses to focus on the fibrous aspect of roots. Ask chn why they might be like this. Link to second function: absorbing water and nutrients from the soil.</p>	<p><b>Observing over time</b></p> <p>Investigate the ways in which water is transported within plants.</p> <p>Experiment using a carnation and a stick of celery in food colouring. Chn to observe whether the colour moves through the plant over the next few days.</p> <p><b>Observing over time Comparative</b></p> <p><b>Do plants need leaves to grow?</b></p> <p>Experiment with marigolds or similar plant. Chn are to think about how we can test the function of leaves. We will remove the leaves of one plant and keep the leaves of the other. Chn to observe growth of plants over the next few weeks.</p>	<p><b>Observing over time Pattern Seeking</b></p> <p><b>What does the stem of a plant do?</b></p> <p>Chn to make final observations of the celery and carnation experiments.</p> <p>Using cress seeds, chn will explore what a plant needs to be healthy. We will remove one of the seeds requirements of light, water, soil to see plants do really need them to survive and remain healthy.</p> 	<p><b>Year 2 Retrieval</b></p> <p>Pupils have made observations and classified seeds and bulbs.</p> <p><b>Observing over time</b></p> <p><b>Why do some plants have flowers?</b></p> <p>Pupils will explore the school grounds looking for plants that have flowers and recording evidence with sketches or by taking photos.</p> <p>They will then look to see how many different flowers they were able to find in a small area.</p> <p>Pupils will learn about the different stages of a life cycle for a flowering plant by using a dandelion as an example. (If possible, a dandelion will be observed over time to see how it changes from a flower to producing seeds.)</p> <p>Pupils will then discuss how a flowers seed might be dispersed. Using a collection of different seeds, children are to speculate how each seed might be dispersed. (Looking at the design of seeds.)</p>	<p><b>Big Question Retrieval</b></p> <p>Pupils will need to identify the different parts of a plant that we have studied. They will then need to answer the big question by explaining the function of each part of the plant.</p> <p>Pupils will be provided with statements and will need to correctly match each statement with a part of a plant</p>
<b>Working Scientifically</b>	using results to draw simple conclusions,	using results to draw simple conclusions,	making systematic and careful observations	using results to draw simple conclusions, make predictions	reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
<b>Organisation &amp; Communication</b>	Chn record their observations of roots	Chn to describe the two experiments and think about how we make them fair tests	Chn record their final observations of the experiments.  Chn describe their investigations in books	Chn arrange parts of a plant lifecycle into the correct order.	Labelled diagram of a plant to be completed independently..
<b>Famous People</b>					

## Term 5 Science enquiry- What is light and how can we change the shape of shadows?

National Curriculum Links	Key Vocabulary	Pupil Offer
<p><b>Science- Light</b>  <b>Pupils should be taught to-</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 sizes of shadows change.</li> </ul>	<p>light, dark  opaque, transparent, translucent  darkness  reflect  light source,  shadow,  reflective, shiny, matt</p>	<p>Shadow puppetry performances</p>

Term 4	Week 1	Week 2	Week 3	Week 4
Lesson Overview including Substantive knowledge	<p style="text-align: center; color: red;"><b>Classification</b> What is darkness?</p> <p>Children are to explore what darkness is. We will try to make the classroom as dark as we possibly can.</p> <p>Chn to be introduced to term 'light sources' and identify as many different light sources as they can.</p> <p style="text-align: center; color: blue;"><b>Lesson 2</b> <b>Classification</b></p> <p>Chn are to be given a group of "light sources". One of which will be the moon. Ask chn to think about which one is the odd one out. How many different answers can they come up with?</p>	<p style="text-align: center; color: red;"><b>Does light reflect off some surface better than others?</b></p> <p>Explain to chn how we can see objects because light travels in a straight line (Model this using a torch and a mirror) and reflects off objects into our eyes allowing us to see the object.</p> <p style="text-align: center; color: blue;"><b>Comparative/Fair Testing</b></p> <p>Chn to decide how reflective different materials are and consider how they will rank the reflectiveness of the materials.</p> <p style="text-align: center; color: blue;"><b>Lesson 2</b></p> <p>Ask chn to think about why the sun might be dangerous for our eyes. Compare with what happens to skin when we are in the sun too long. How could we protect our eyes against the sun?</p>	<p style="text-align: center; color: blue;"><b>Comparative/Fair Testing</b> How are shadows formed?</p> <p>Allow children to explore how different materials can make different shadows based upon how translucent/opaque they are.</p> <p>Chn to design and construct their own shadow puppets and test them.</p> <p>Children practise in groups with their shadow puppets.</p> <p style="text-align: center; color: blue;"><b>Lesson 2</b></p> <p>Give time for chn to practise one last time before performing in front of the class.</p>	<p style="text-align: center; color: blue;"><b>Comparative/Fair Testing</b> How can we change the shape of shadows?</p> <p>Remind children about how shadows are formed. In this lesson, chn will be challenged to perform spells on their shadow puppets.</p> <p>Using their puppets and a torch, can chn get their puppets:</p> <ul style="list-style-type: none"> <li>- To grow taller?</li> <li>- To get shorter?</li> <li>- To get thinner?</li> </ul> <p style="text-align: center;">How did chn achieve this?</p> <p>Chn to explore how angle of light and distance of the object from the light source can change shadows.</p> <p style="text-align: center; color: red;"><b>Big Question Retrieval</b> <b>Lesson 2</b></p> <p>Using knowledge acquired from this enquiry, chn are to independently answer questions from the CGP knowledge organiser. This will form part of the assessment from this unit.</p>
Working Scientifically		<p>identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>setting up simple practical enquiries, comparative and fair tests</p>	<p>recording findings using simple scientific language, drawings, labelled diagrams,</p>
Organisation & Communication	<p>Chn to produce small labelled sketches of as many different light sources that they can think of.</p> <p>Chn to record odd one out answers in their books.</p>	<p>Chn record their results from their investigation in any way they choose. They then comment on what their results show/mean.</p> <p>Chn to produce a poster to explain the dangers of sun to our eyes and how we can protect them.</p>	<p>Children show their shadow puppets working in front of the rest of the class. Images and videos recorded to be uploaded on to Seesaw.</p>	<p>Shadow drawings from different times of the day.  Chn to take photos of their drawings and upload to their Seesaw accounts.</p>
Famous People			<p style="text-align: center;">Richard Bradshaw</p>	