

# YEAR 3

TERM	Autumn 2
Term Thread	Stones and Bones
"EXPLORE" for ½ term (trip, visitor, experience)	Rot or Not archaeology workshop OR Archaeologist from MMU or Manchester Museum
Breadth of Study	BIOLOGY
Threshold Concept	Understand animals and humans - Skeletons, nutrition and food chains.
Key person/people	
LINK	We are continuing to study along the theme of 'Stones and Bones'. Over the last half term, we have been learning about our ancestors. How humans spread all over the world beginning in Africa. We learnt that humans crossed through Europe and reached the UK. In an art project we took inspiration from cave art created by people in the Stone Age. We also used bones as inspiration, which we looked at in our science lessons as well. An important part of surviving in the Stone Age was food and how we got it. We will be looking at this as Historian later in the term. But first we will work as Scientists, looking back at the work we did learning about bones and skeletons the importance of food and nutrition for all animals, including ourselves to be healthy.
No. of lessons	6
UNIT CONTENT	<p style="text-align: center;"><b>Application of Knowledge and Skills</b></p> <p><b>Lesson 1:</b> Revisit learning from previous half term. Challenge sort animals into vertebrates and invertebrates and compile a table in books, sticking photographs or writing the names of each animal in the correct column. A question is posed for group discussion: Are all animals with wings invertebrates? (Insects are invertebrates but birds are vertebrates)</p> <p><b>Lesson 2:</b> Revisit functions of bones and skeleton. Pupils to create posters explaining the 3 main functions.</p> <p><b>Lesson 3:</b> Revisit names of major bones in the skeleton. Have a quick reminder game of Simon Says... touch your (add names of major bones). Label skeletons independently with major bones.</p> <p><b>Lesson 4:</b> Revisit muscles and how they work. Watch this film showing a model of how muscles work in the arm <a href="https://www.youtube.com/watch?v=FVIpeUIpFf0/">https://www.youtube.com/watch?v=FVIpeUIpFf0/</a> Pupils work in pairs and small groups to make a working model of an arm muscle following the teachers direction (based on this method <a href="https://www.youtube.com/watch?v=pBKBAaW3ydE">https://www.youtube.com/watch?v=pBKBAaW3ydE</a> see creative team for support).</p> <p><b>Lesson 5:</b> Revisit nutrients with the 7 types. Pupils complete the worksheet with all seven nutrients named. They explain why we need them, then provide examples of foods high in each nutrient. Pupils use this information to design a meal with each of the nutrients required. This can be drawn on a paper plate or on a worksheet with a glass of water included on the sheet.</p> <p><b>Lesson 6:</b> Revisit carnivores, herbivores and omnivores. Pupils create a Venn diagram, placing a range of animals as either carnivore or herbivore with omnivore in the intersection.</p>
Milestones	<ul style="list-style-type: none"> <li>• Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> <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>

# YEAR 3

TERM	SPRING 1
Term Thread	<b>The Bronze Age</b>
'EXPLORE' IDEAS	Carving and Casting Exercise
Breadth of Study	CHEMISTRY
Threshold Concept	Investigate materials Rocks, Soils and Fossils
LINK	This half term we will be exploring the time in British history after the Stone Age. It is called the Bronze Age. It is when people began using tools made of metal and a more settled way of life was happening with people living in communities based around farming. Stone was still important during the Bronze Age. It was used to make buildings and walls. Soil was also important as people used it to plant their crops in. We are going to begin by working as Scientists to understand what rocks and soils are and how they are made. Amber is a type of fossil. Amber was important to Bronze Age people who used it for jewellery. We will also work as Scientists to learn what fossils are and how they can tell us so much about our planet's past.
No. of lessons	3
UNIT CONTENT	<p style="text-align: center;"><b>Development of Knowledge and Skills</b></p> <p><b>Lesson 1:</b> Soil. What is soil made from? What is meant by 'organic'? (naturally occurring materials from nature) Watch... <a href="https://www.bbc.co.uk/bitesize/topics/zjty4wx/articles/ztvbk2p">https://www.bbc.co.uk/bitesize/topics/zjty4wx/articles/ztvbk2p</a> (see notes on Soil under the film. There are also quizzes which can be transcribed). Record how soil is made and other learning.</p> <p><b>Lesson 2:</b> What are fossils? How are they formed? (See notes on 'The Fossil Record' below the video on BBC Bitesize) <a href="https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/z22g7p3">https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/z22g7p3</a> What is amber? (Amber is fossilized tree resin. It sometimes captured prehistoric insects and plant life as the resin seeped from trees) Record learning -how fossils are made and what they are.</p> <p>(NOTE: There are 7 other clips on Bitesize to do with rocks fossils and soils you could draw from <a href="https://www.bbc.co.uk/bitesize/topics/z9bbkqt/resources/1">https://www.bbc.co.uk/bitesize/topics/z9bbkqt/resources/1</a>).</p> <p><b>Lesson 3:</b> Rocks. Learn the three kinds of rock and how they are formed Sedimentary, Metamorphic and Igneous. Introduce rock cycle- Record rock cycle. Watch... <a href="https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/zsgkdmn">https://www.bbc.co.uk/bitesize/topics/z9bbkqt/articles/zsgkdmn</a> Finish with- What is an 'Ore'? Some rocks contain metal. An ore is a rock that contains enough of a metal to make taking the metal out (extracting it) worthwhile. It is hard work to get the metal out of rocks. Finish with <a href="https://www.youtube.com/watch?v=Ohij1e2oZio">https://www.youtube.com/watch?v=Ohij1e2oZio</a> by The Museum of London showing how metal was processed – references use of clay (type of soil) as well metal ores.</p>
Milestones	<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>

## YEAR 3: Continued.

TERM	SPRING 1
Term Thread	<b>The Bronze Age</b>
‘EXPLORE’ IDEAS	<b>Carving and Casting Exercise</b>
Breadth of Study	<b>BIOLOGY</b>
Threshold Concept	<b>Understand Plants – Flowers, Seeds and Pollination</b>
<b>LINK</b>	We have been looking at fossils, rocks, and soils. Soil is needed to grow plants and crops. At the end of the Stone Age was the Neolithic - the ‘new’ Stone Age, this is where our ancestors stopped being hunter gatherers and began farming. Farming really developed in the Bronze Age, as more types of plants and seeds were brought to this country and grown for food. We are now going to work as Scientists to understand more about plants and in particular their seeds.
No. of lessons	<b>3</b>
<b>UNIT CONTENT</b>	<p style="text-align: center;"><b>Development of Knowledge and Skills</b></p> <p style="text-align: center;"><b>Understand Plants - Flowers seeds and pollination: Development of Knowledge</b></p> <p><b>Lesson 1:</b> Parts of a plant Revision of Milestones 1. What are the different functions? e.g. roots- keeping the plant securely in position, drawing nutrients and water into the plant. Stem supporting leaves and taking them towards light sources. Leaves are food factories which catch energy from the sun to turn into energy for the plant. Flower to attract insects. Life cycle of plant introduction. <a href="https://wordwall.net/resource/47640/science/basic-plant-labelling-y1">https://wordwall.net/resource/47640/science/basic-plant-labelling-y1</a> <a href="https://wordwall.net/resource/449505/science/tlc-can-i-label-parts-plant">https://wordwall.net/resource/449505/science/tlc-can-i-label-parts-plant</a> . Record learning with diagrams.</p> <p><b>Lesson 2:</b> Parts of a flower revision from Milestone 1 Watch <a href="https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-the-anatomy-of-the-flower/zjmhkmn">https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-the-anatomy-of-the-flower/zjmhkmn</a> Label a diagram with names of parts. Role of flowers- what are flowers for? Attracting insects/ animals for pollination. Record learning. Hand out copies of Ivy’s rap for pupils to try and learn for next half term.</p> <p style="text-align: center;"><b>Ivy’s Flower Parts Rap</b></p> <p style="text-align: center;">So this is what I learned in less than an hour, The carpel’s one important part of the flower.          There’s stigma, style and ovary, The insect gets the nectar from the nectary          And what supports the flower while it is feeble. They look like leaves, but we call them sepals          And what makes a flower so bright and special, All the pretty colours, on all the pretty petals          Another pretty part is called the stamen, On the top is the anther, on the bottom filament          On the base the whole ovary makes the whole spectacle, Of fruit, which then moves down the receptacle.          Hey Posey, you got any questions, Guess not, movin’ on, I’m done with this lesson! (Mike Drop!)</p> <p><b>Before Lesson 3:</b> Acorn game- each pupil is given an acorn as they go out to break, they write their initials on the acorn with fine markers- they are told to hide it quickly somewhere on the playground quickly during their break (they can bury it if they want)</p> <p><b>Lesson 3:</b> Seed dispersal <a href="https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-what-is-pollination-and-how-does-it-work/zv4df4j">https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-what-is-pollination-and-how-does-it-work/zv4df4j</a> (trigger warning another terrible song!) What does ‘dispersal’ mean and what are the different ways this happens- BEEFFS = Blow, Eat, Explode, Fall, Float, Stick. Record learning. Look at seed type specimens. End the lesson going outside- give the pupils five minutes to find their acorn (with their initials). All come together. Who found their acorn? Who found someone else’s acorn? Who did not find one? Remind that some animals like birds eat fruits and the seed comes out in their excrement. Squirrels collect nuts which are the fruits of some trees and hide them so they can have food in the winter. Not everyone found their acorn, just like not every squirrel will find every nut they buried. - Ask pupils why this might help plants, if squirrels lose some of their acorns? How does this help the plants? (POSSIBLE answer- ready planted seeds/nuts ready to grow in spring!)</p>
Milestones	<ul style="list-style-type: none"> <li>• <b>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</b> <ul style="list-style-type: none"> <li>• <b>explore the requirements of plants for life and growth and how they vary from plant to plant</b> <ul style="list-style-type: none"> <li>• <b>investigate the way in which water is transported within plants</b></li> </ul> </li> </ul> </li> <li>• <b>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</b></li> </ul>

# YEAR 3

TERM	SPRING 2
Term Thread	The Bronze Age
'EXPLORE' DEAS	Grow your own crops like bronze age farmers
Breadth of Study	CHEMISTRY
Threshold Concept	Investigate materials- Rocks, Soils and Fossils
LINK	We have been exploring the Bronze Age last half term. Later in this half term we will be looking at special stone monuments created for acts of worship and gathering. Rocks, soils and metal ores were so important to our early ancestors. And we can learn so much about ancient life on Earth from fossils. We will begin our work this half term by working again as Scientists and using what we have learnt about rocks, soils and fossils.
No. of lessons	3
UNIT CONTENT	<p style="text-align: center;"><b>Application of Knowledge and Skills</b></p> <p style="text-align: center;"><b>Investigate materials- Rocks and Soils: Application of Knowledge</b></p> <p><b>Lesson 1:</b> Revise- Rocks and rock cycle- sort rock samples into Sedimentary, Metamorphic, and Igneous categories. Attempt to identify names of some rock samples.</p> <p><b>Lesson 2:</b> Revise- How are fossils made? How can fossils tell us so much about our planet's ancient history? (Fossils demonstrate how living things and how the Earth have changed; Amber can hold DNA and genetic information of insects, small animals, seeds, and plants captured as the resin rolled down the trunk of ancient trees) Explore examples of real fossils including amber. Draw and label the fossils. Interesting to note that legends, such as the existence of dragons and other mythical beasts may well have come from ancestors digging up fossilised dinosaur skeletons, but not understanding what they could be.</p> <p><b>Lesson 3:</b> Revise soils. Make a sample jar showing formation of soil layers. Bed rock, subsoil, topsoil, humus (with ripped up leaves and toy worms and insects) (See Creative Team for materials.) Label each layer independently. (Avoid doing this exercise with different foods to make a 'soil layer' desert, there are loads of these online – they only thing they will remember is the flavours and it isn't working scientifically!)</p>
Milestones	<ul style="list-style-type: none"> <li>• <b>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</b></li> <li>• <b>describe in simple terms how fossils are formed when things that have lived are trapped within rock</b></li> <li>• <b>recognise that soils are made from rocks and organic matter.</b></li> </ul>

## YEAR 3: Continued.

TERM	SPRING 2
Term Thread	<b>The Bronze Age</b>
‘EXPLORE’ Dig Deeper (visit, visitor, experience) IDEAS	Grow your own crops like Bronze Age farmers
Breadth of Study	<b>BIOLOGY</b>
Threshold Concept	Understand Plants Flowers, seeds and pollination
<b>LINK</b>	We have been working as Scientists and learnt about soil. The top layer of soil is called the humus, which is made largely of rotting plant materials like leaves. Last half term we explored the changes in Britain moving from the Stone Age to the Bronze Age. We learnt about the changes that came from farming and the way people brought ideas and technologies to Britain from other parts of the world, including the Beaker People. New plants like beans and peas were brought to Britain when people migrated and were farmed. Seeds from plants like barley and wheat were ground up to make flour. Other seeds were kept so they could be planted, and more crops grown. We are going to continue to work as Scientist to understand plants and how they reproduce to make more plants.
No. of lessons	<b>3</b>
<b>UNIT CONTENT</b>	<p style="text-align: center;"><b>Application of Knowledge and Skills</b></p> <p><b>Lesson 1:</b> Recap plant life cycle- put in order. Revise parts of plant and their function. How water is transported -Capillary action. Observe how, when you put a straw into a jar of water, the water level inside the straw is higher than in the water. Plants have tiny tubes in their stems that carry water they are not called straws they are called xylem. Pupils investigate and observe this process by setting up the celery experiment <a href="https://www.kiwico.com/diy/Science-Projects-for-Kids/3/project/Celery-Experiment/571">https://www.kiwico.com/diy/Science-Projects-for-Kids/3/project/Celery-Experiment/571</a> . This works well as they should begin to see changes within 20 minutes or so and when they peel back the fibres of the celery stick in lesson 2, they can see the food colouring has coloured the xylem which works well as you can peel back the fibres of the celery to see how the tubes.</p> <p><b>Lesson 2:</b> Peel back the celery fibres and observe the coloured xylem. Revise parts of a flower. Draw and label diagram of a flower giving short descriptions of their function in the reproduction of the plant. Arrange descriptions of the different stages of bee pollination in the correct order to make a flow chart. (NOTE for teacher- order something like this: Flower attracts bee with the smell of nectar and colourful petals- Bee lands on flower- Bee rubs past pollen to get to nectar- pollen attaches to hairs on the bee as it collects the nectar- bee flies to another flower – Bee rubs the pollen on the flower's stigma as it collects more nectar- pollen moves down the style to an ovule- the ovule makes the seed- the flower dies back- the seed is released and dispersed. Does anyone want to perform 'Ivy's Flower Parts Song'?</p> <p><b>Lesson 3:</b> Revise seed dispersal, watch <a href="https://www.bbc.co.uk/bitesize/clips/zs9c87h">https://www.bbc.co.uk/bitesize/clips/zs9c87h</a> and <a href="https://www.bbc.co.uk/bitesize/clips/znvfb9q">https://www.bbc.co.uk/bitesize/clips/znvfb9q</a> – sort a range of seeds into BEEFES categories for dispersal. Investigation into seed dispersal. Create models using large wooden beads as the seeds - e.g. – Blow (like dandelion) make a parachute and blow with a hair drier. Fall (like sycamore) paper spinning helicopter out of the window. Which models were successful and why? (If any ideas or materials are needed, please speak to the Creative Team.) Record findings</p>
Milestones	<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 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>

# YEAR 3

<b>TERM</b>	<b>SUMMER 1</b>
<b>Term Thread</b>	<b>Iron Age Britain</b>
Explore (visit, visitor experience) IDEAS	Moving mega Ms at Mellor Hill Fort and round house
<b>Breadth of Study</b>	<b>PHYSICS</b>
<b>Threshold Concept</b>	<b>Movement, forces and magnets - Magnetic metals</b>
<b>Key Scientists</b>	<b>NA</b>
<b>LINK</b>	This term we will be moving onto the Iron Age, which was the next big human development, changing the way people lived by introducing new technologies and ideas. Iron was another metal much stronger and therefore more useful than bronze. Bronze was made by mixing copper and tin. Unlike copper and tin, iron is magnetic. Magnetism is a 'force'. We will begin our term working as Scientists and learning about forces and magnetism.
<b>No. of lessons</b>	<b>3</b>
<b>UNIT CONTENT</b>	<p style="text-align: center;"><b>Development of Knowledge and Skills</b></p> <p><b>Lesson 1:</b> Revisit forces from Year 2 What are forces? Watch and read <a href="https://www.bbc.co.uk/bitesize/topics/zvpp34j/articles/zywcrdm">https://www.bbc.co.uk/bitesize/topics/zvpp34j/articles/zywcrdm</a> What are different forces- (push, pull, twist). Watch compilation of pushes and pulls. <a href="https://www.bbc.co.uk/bitesize/clips/zkw8q6f">https://www.bbc.co.uk/bitesize/clips/zkw8q6f</a> Watch and read <a href="https://www.bbc.co.uk/bitesize/topics/zn77hyc/articles/zptckqt">https://www.bbc.co.uk/bitesize/topics/zn77hyc/articles/zptckqt</a>. A force is either a push or a pull, forces can make objects speed up, slow down or change direction. Record what a force is and push/pull/twist. Introduction to another force -Friction. <a href="https://www.bbc.co.uk/bitesize/topics/zsxxsbk/articles/zxqrdxs">https://www.bbc.co.uk/bitesize/topics/zsxxsbk/articles/zxqrdxs</a> Record definition of friction and list everyday examples of friction. Understand that friction is a force which always slows and object down.</p> <p><b>Lesson 2:</b> Another force - introduction to magnetism. Watch, read and record- <a href="https://www.bbc.co.uk/bitesize/topics/z4qtvvcw/articles/zhs7xyc">https://www.bbc.co.uk/bitesize/topics/z4qtvvcw/articles/zhs7xyc</a> . Each child has a stick magnet. In pairs observe how opposite poles attract and matching poles repel. Understand that magnets can push or pull. Revisit poles. Observe how magnets attract and repel each other depending on which poles are put together. Play the magnetic train game.</p> <p><b>Lesson 3:</b> Continue to learn about magnetism. Magnets and their invisible force <a href="https://www.bbc.co.uk/bitesize/clips/zk9rkqt">https://www.bbc.co.uk/bitesize/clips/zk9rkqt</a> . What materials are magnetic? Watch, read and record <a href="https://www.bbc.co.uk/bitesize/topics/zyttyrd/articles/zw889qt">https://www.bbc.co.uk/bitesize/topics/zyttyrd/articles/zw889qt</a> Teacher demonstrates that not all metals are magnetic, with a range of metal objects. Use the metal strips from the science cupboard. Each pupil given a magnet- go on a class scavenger hunt to find objects around the room which are and are not magnetic. List examples of magnetic and non-magnetic materials. Opportunity to revisit the categorisation of materials from Year 2 Summer 1.</p>
<b>Milestones</b>	<ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> <li>• notice that some forces need contact between two 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 two poles.</li> <li>• predict whether two magnets will attract or repel each other, depending on which poles are facing</li> </ul>

## YEAR 3: continued.

TERM	SUMMER 1
<b>Term Thread</b>	<b>Iron Age Britain</b>
Explore (visit, visitor experience) IDEAS	<b>Moving mega Ms at Mellor Hill Fort and round house</b>
<b>Breadth of Study</b>	<b>PHYSICS</b>
<b>Threshold Concept</b>	<b>Light and seeing</b> Light sources
<b>Key Scientists</b>	
<b>LINK</b>	<p>We have been looking at forces and magnetism as scientist. Iron is a magnetic metal. Iron is a very useful metal which played an important part in human history. The Iron Age was another massive change in Britain and there were lots of new tool's ideas and technologies. A technology Iron Age people did not have was electricity. They had no electric lights and torches. Imagine how different we might feel about the night and darkness without being able to flick on a light. Prehistoric people only had naturally occurring light sources like the sun and stars and fire was the only artificial light they could control. Iron Age people's homes were lit with a fire. Lamps were used for going down mines where metal ores were dug out of the ground. They were made of a hollowed-out stones with moss for a wick and animal fat to burn as fuel. We will continue by working as Scientists to explore light and light sources.</p>
<b>No. of lessons</b>	<b>3</b>
<b>UNIT CONTENT</b>	<p style="text-align: center;"><b>Development of Knowledge and Skills</b></p> <p style="text-align: center;"><b>Lesson 1:</b> Watch basic introduction – To light, reflection and shadows  <a href="https://www.bbc.co.uk/bitesize/articles/zjix6v4">https://www.bbc.co.uk/bitesize/articles/zjix6v4</a> We need light to see! Natural and artificial light forces in ancient times. Natural light forces- Sun, stars lightning, bush fires, glow worms, luminescent planktons etc Artificial – fire in ancient times. Current artificial light forces – lamps, touches, candles, TV, computer screens etc. Watch <a href="https://www.bbc.co.uk/bitesize/clips/zb3s34j">https://www.bbc.co.uk/bitesize/clips/zb3s34j</a> - torches  <a href="https://www.bbc.co.uk/bitesize/clips/zjkc87h">https://www.bbc.co.uk/bitesize/clips/zjkc87h</a> - for compilation. Record learning. Brief introduction to the danger of looking directly at the sun. Question: how can we protect our eyes?</p> <p style="text-align: center;"><b>Lesson 2:</b> Mirrors and reflective surfaces. Watch. <a href="https://www.bbc.co.uk/bitesize/articles/zcsq4xs">https://www.bbc.co.uk/bitesize/articles/zcsq4xs</a> and <a href="https://www.bbc.co.uk/bitesize/topics/zbssgk7/articles/zqdx82">https://www.bbc.co.uk/bitesize/topics/zbssgk7/articles/zqdx82</a> When light from an object is reflected by a surface, it changes direction. It bounces off the surface at the same angle as it hits it. Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull and dark surfaces such as dark fabrics do not reflect light well. Teacher demonstrates, shining a touch light onto various surfaces. Pupils record learning and note key vocab. Revisit danger of looking directly at the sun. Question: how can we protect our eyes?</p> <p style="text-align: center;"><b>Lesson 3:</b> Shadows - watch <a href="https://www.bbc.co.uk/bitesize/clips/zshxpv4">https://www.bbc.co.uk/bitesize/clips/zshxpv4</a> and <a href="https://www.bbc.co.uk/bitesize/clips/z6fnvcw">https://www.bbc.co.uk/bitesize/clips/z6fnvcw</a> - shadows and time of day.</p> <p>What makes a shadow? An object that is opaque blocking the pathway of light. Record Introduction to definitions – opaque, transparent, translucent and reflective. Investigation with shining a torch at different objects – glass jar of water (transparent), mug (opaque) and a large metal spoon (reflective), sunglasses (translucent). Link back to dangers of looking at sun. Which creates shadows, which reflects light, which one can light travel through? Record definitions of key words</p>
<b>Milestones</b>	<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 an opaque object</li> <li>• find patterns in the way that the size of shadows change.</li> </ul>

# YEAR 3

<b>TERM</b>	<b>SUMMER 2</b>
<b>Term Thread</b>	Iron Age Britain
Explore (visit, visitor experience) IDEAS	Visit to Mam Tor and Castleton
<b>Breadth of Study</b>	<b>PHYSICS</b>
<b>Threshold Concept</b>	Movement, forces and magnets Magnetic metals
<b>Key Scientists</b>	
<b>LINK</b>	Last half term we began to look at the changes that happened in Britain in the Iron Age. As Scientists we learnt how iron is magnetic and bronze is not. We worked at designers to look at the development of sledges to move heavy objects like the Megaliths and Monoliths, then rollers and finally the use of wheels. In the Iron Age, wheeled carts and chariots were well established. We worked as designers to make model cars to understand how the 'simple machine' of a wheel and axel works. We are going to continue our work as Scientists to look at movement, forces and magnetism by using the cars we made in some of our experiments and observations.
<b>No. of lessons</b>	<b>3</b>
<b>UNIT CONTENT</b>	<p style="text-align: center;"><b>Application of Knowledge and Skills</b></p> <p><b>Lesson 1:</b> Revisit forces and friction which slows movement. Explore how different textures and materials can change how fast or slow a car (made in DT last half term) can move on a ramp. Make a table with each material (sandpaper, carpet, bubble wrap, tinfoil, satin etc.) and record timings. Discuss outcomes and plot the results on a graph.</p> <p><b>Lesson 2:</b> Revisit magnetism. Investigation- Making predictions about which objects will and won't be magnetic, then test and record finding- which predictions were correct? Were there any surprises? Did everyone have the same results? Develop questions as a class for Wonder Wall.</p> <p><b>Lesson 3:</b> Revisit poles. Investigation- Work in pairs- use electrical tape to attach a magnet to the car made in DT last half term. Experiment with a second magnet to push and pull the car without touching it. Notice the poles in relation to the movement (matching repel, opposite attract). Draw 2 diagrams showing the movement of the cars in relation to the poles. Use a ruler to measure how near to the car the second magnet needs to be before it responds to the magnet. Question: What could this tell us? (Answer: how strong the magnet is).</p>
<b>Milestones</b>	<ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> <li>• notice that some forces need contact between two objects, but magnetic forces can act at a distance. 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             <ul style="list-style-type: none"> <li>• describe magnets as having two poles</li> </ul> </li> <li>• predict whether two magnets will attract or repel each other, depending on which poles are facing</li> </ul>



## YEAR 3: continued

TERM	SUMMER 2
<b>Term Thread</b>	Iron Age Britain
Explore (visit, visitor experience) IDEAS	Visit to Mam Tor and Castleton
<b>Breadth of Study</b>	<b>PHYSICS</b>
<b>Threshold Concept</b>	Light and seeing Light sources
Key Scientists	
<b>LINK</b>	<p>Last term we learnt about the Bronze Age. Light, shadows and the Sun were incredibly important to the Bronze Age People. We know this because they built and celebrated the movement of the sun in places like Stonehenge. In the Iron Age the sun was still an important part of the Ancient Britons beliefs. The movements of the sun were celebrated with festivals at the Spring Equinox (when the sun is exactly above the equator and day and night are of equal length). They also celebrated the Summer Solstice (the longest day with the most hours of sun and the Winter Solstice (the shortest day). They also had a fire festival called Beltane. The sun and fire are both example of natural light sources. We are going to continue to work as Scientist to explore light and light sources.</p>
No. of lessons	<b>3</b>
<b>UNIT CONTENT</b>	<p style="text-align: center;"><b>Application of Knowledge and Skills</b></p> <p><b>Lesson 1:</b> Revise natural and artificial light sources and reflective surfaces. Sort light sources in 'Natural' and 'Artificial'. Sort objects into reflective and non-reflective. Investigate bouncing light bouncing from mirrors. If it is a sunny day, pupils could try sending signals or messages with mirrors.</p> <p><b>Lesson 2:</b> Revise shadow- sort art materials into opaque/transparent/translucent/reflective. Use the materials to make a sun catcher. Hold it up to the light to see if shadows are cast and how colours are projected. Pupils select one of the materials used to make the suncatchers and stick in their book write an explanation as to whether it would make a shadow or not and why.</p> <p><b>Lesson 3:</b> Revise shadow. Investigation- Changing direction and length of shadows. Observation work-Work in pairs. Make a tin foil figure (opaque), drawing their shadows cast by a torch held at different angles investigation, draw the shapes of the shadows onto the cardboard the figure is mounted on. (Creative team to make short film -insert link). Pupils then asked to apply this and explore their own and each other's shadows on the playground at different times of the day (morning break, lunchtime, and home time) Why will their shadows look different at different times of the day?</p>
<b>Milestones</b>	<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               <ul style="list-style-type: none"> <li>• notice that light is reflected from surfaces</li> </ul> </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 an opaque object               <ul style="list-style-type: none"> <li>• find patterns in the way that the size of shadows change.</li> </ul> </li> </ul>

<b>TERM</b>	<b>SPRING 2</b>
Term Thread	<b>Machinery and Manchester</b>
EXPLORE' for ½ term (trip, visitor, experience)	River Trip East Lancashire Railway – Take the tram to Bury then ride on a steam train or John Ryland Library.
<b>Breadth of Study</b>	<b>BIOLOGY</b>
<b>Threshold Concept</b>	<b>Understand animals and humans</b>
Key Person/people	
<b>LINK</b>	We have been learning about the way the Industrial Revolution changed Manchester. Working people at that time had a difficult and short life. Children as young as 4 years old went to work in factories and worked hard for between 10-14 hours every day (the school day is 6 ½ hours but around 1 ½ hours of that is breaktime). In Manchester over half the children born to working people died before they were 5 years old! This mean that over half the people born never became adults or even got to be your age. We are going to continue working as Scientists to understand the human life cycle and how we change as we get older.
<b>No. of lessons</b>	<b>1</b>
<b>UNIT CONTENT</b>	<b>Understand animals and humans -Application of Knowledge</b> <b>Lesson 1:</b> Revise human lifecycle. Create a flow chart or other diagrams to showing the stages of the Human life cycle. Discussion around death being part of this cycle. Usually, it happens during old age but note that it can happen at any stage due to ancients or ill health.
<b>Milestones</b>	<ul style="list-style-type: none"> <li>• describe the changes as humans develop to old age.</li> </ul>