

| Medium Term Plan: Electricity Y3/4   |  |  |   |  |
|--|--|--|---|--|
| Enquiry Type:  |  | Working Scientifically Concepts:   | Previous Scientific Vocabulary  | New Scientific vocabulary  |
| <ul style="list-style-type: none"><li>Comparative and fair testing</li><li>Pattern seeking</li><li>Research using secondary sources</li><li>Identifying, classifying and grouping</li><li>Observing over time.</li></ul> |  | <ul style="list-style-type: none"><li>Asking questions</li><li>Making observations and measuring them</li><li>Engaging in practical enquiry</li><li>Recording and presenting evidence</li><li>Answering questions and concluding</li><li>Evaluating and predicting</li><li>Communicating findings.</li></ul> | <ul style="list-style-type: none"><li>energy</li><li>electricity</li><li>objects</li><li>power</li><li>working</li><li>environment</li></ul>  | <ul style="list-style-type: none"><li>conductor</li><li>insulator</li><li>switch</li><li>circuit</li><li>buzzer</li><li>cells</li><li>wires</li><li>fuse</li></ul> |
| Previous Learning End Point Assessment in this concept:  | Previous Learning End Point Assessment in working scientifically concepts:   |  | End Point Assessment Statements:  |  |
| I know that objects around me use electricity.   | <p>I can ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen).</p> <p>I can sometimes answer these questions.</p> <p>I can answer questions when my teacher explains it through a scenario.</p> <p>I can take measurements by drawing comparisons.</p> <p>I can record my observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.</p> <p>I can record my measurements e.g. using prepared tables, pictograms, tally charts and block graphs.</p> <p>I can classify using simple prepared tables and sorting rings. I can use my experiences of the world to suggest appropriate answers to questions.</p> <p>With help, I can relate these to my evidence e.g. observations I have made, measurements I have taken or information I have gained from secondary sources.</p> |  | <p><u>Electricity:</u></p> <p>1. I can identify common appliances that run on electricity (e.g. TV, oven, fridge, computers, mobile phones).</p> <p>2. I can name and identify the basic components of a circuit: wires, cells, bulbs, switches and buzzers.</p> <p>3. I can construct a simple electrical circuit, including: cells, wires, bulbs, switches and buzzers, naming and identifying the different parts.</p> <p>4. I can explain the role of different electrical components and what would happen if they were altered or not used.</p> <p>5. I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop - with a battery</p> <p>6. I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>7. I can recognise some common conductors (copper, aluminium, gold) and insulators (glass, air, plastic, rubber), and associate metals with being good conductors.</p> <p>8. I can compare and group materials based on their ability to conduct and insulate electricity.</p> |  |

|                        | Revisit of knowledge short Afl lesson | Lesson 1  | Lesson 2 and 3  | Lesson 4   | Lesson 5   | Lesson 6  | Lesson 7   |
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| Learning Question      |                                       | How many electrical appliances are there in the school and how do they work?                                | What is a circuit and how are they represented?   | Who invented the light bulb – Thomas Edison or Joseph Swan?  | How long does a battery light a torch for?   | What are conductors and insulators?   | How does the thickness of a conducting material affect how bright the lamp is?   |
| Enquiry type           |                                       | Pattern seeking<br>Identifying classifying and grouping.  | Identifying classifying and grouping.   | Research using secondary sources   | Observing over time  | Identifying classifying and grouping.   | Comparative and fair test  |
| Conceptual Knowledge   |                                       | I can identify common appliances that run on electricity (e.g. TV, oven, fridge, computers, mobile phones). | <p>I can name and identify the basic components of a circuit: wires, cells, bulbs, switches and buzzers.</p> <p>I can construct a simple electrical circuit, including: cells, wires, bulbs, switches and buzzers, naming and identifying the different parts.</p> <p>I can explain the role of different electrical components and what would happen if they were altered or not used.</p> <p>I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop - with a battery</p> <p>I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> | I can identify common appliances that run on electricity (e.g. TV, oven, fridge, computers, mobile phones).            | I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop - with a battery | I can recognise some common conductors (copper, aluminium, gold) and insulators (glass, air, plastic, rubber), and associate metals with being good conductors. | I can recognise some common conductors (copper, aluminium, gold) and insulators (glass, air, plastic, rubber), and associate metals with being good conductors.<br>I can compare and group materials based on their ability to conduct and insulate electricity. |
| Working Scientifically |                                       | I can draw on prior knowledge to help answer a question.<br>I can make systematic and careful observations. | I can sometimes decide how to record and present evidence.<br>I can record my measurements e.g. using tables, tally charts and bar charts (given templates when needed).  | I can recognise when secondary sources can be used to answer questions that cannot be answered through practical work. | I can use a range of equipment for measuring length, time, temperature and capacity.<br>I can use standard units for my measurements.                    | I can draw conclusions based on my evidence and current subject knowledge.  | I can sometimes decide how to record and present evidence.   |

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| <b>Concept flashback (same year or previous phase).</b>   |  | Plants Y1/2 :<br><a href="https://wordwall.net/resource/30575337/science/plants">https://wordwall.net/resource/30575337/science/plants</a>   | Living things and their habitats Y1/2:<br><a href="https://wordwall.net/resource/3061515/science/animals-including-humans-quiz-year-2">https://wordwall.net/resource/3061515/science/animals-including-humans-quiz-year-2</a><br><a href="https://wordwall.net/resource/3062303/science/healthy-living-quiz-year-2">https://wordwall.net/resource/3062303/science/healthy-living-quiz-year-2</a> | Animals including humans Y1/2:<br>Looking at food and carnivore and herbivores<br><a href="https://wordwall.net/resource/16459120/science/cusp-year-1-what-does-food-tell-us-about-an-animal">https://wordwall.net/resource/16459120/science/cusp-year-1-what-does-food-tell-us-about-an-animal</a> | Materials Y1/2:<br><a href="https://wordwall.net/resource/380188/science/properties">https://wordwall.net/resource/380188/science/properties</a>   | Materials Y1/2:<br><a href="https://wordwall.net/resource/2980643/science/material-sorting-year-1">https://wordwall.net/resource/2980643/science/material-sorting-year-1</a>  | Plants Y1/2:<br><a href="https://wordwall.net/resource/2976862/science/parts-of-a-tree-labeling-year-1">https://wordwall.net/resource/2976862/science/parts-of-a-tree-labeling-year-1</a> |
| <b>Review/ Revisit</b>  | Introduce key vocabulary for this unit and practice saying these terms together. | Vocabulary   | Vocabulary<br>What electricity is – mains or battery?  | Vocabulary<br>What electricity is – mains or battery?<br>Circuit components – label<br>Does the circuit work?   | Vocabulary<br>Circuit components – label<br>Does the circuit work?   | Vocabulary<br>Circuit components – label<br>Does the circuit work?  | Vocabulary<br>What electricity is – mains or battery?<br>Circuit components – label<br>Does the circuit work?<br>What is a conductor?<br>What is an insulator?                            |
| <b>Read</b>   |  | KS2 study book – page 73 (end of lesson if you don't want children to know at the beginning).  | KS2 study book – pages 74 and 75   | Research lesson – reading secondary sources and findings.   | <a href="https://www.playosmo.com/kids-learning/how-does-a-flashlight-work/">https://www.playosmo.com/kids-learning/how-does-a-flashlight-work/</a> use this website to introduce a flashlight/torch and what it is. | KS2 study book – page 76  | KS2 study book – page 76  |
| <b>Teach</b>  |  | What is electricity?<br>Teach how we generate electricity and the two sources of electricity. Ensure that children know the difference between mains and battery powered electrical appliances. Discuss some which are both – how do these work? | Show a complete and incomplete circuit – which is which and how do we know.<br>Teach what a circuit is. Link back to the root word circle.<br>Model components in a simple circuit, what do they do and how do we know. What if I take a component out?  | How to research and the basis of the theory for the two scientists being responsible for the invention of the lightbulb.  | What is a torch – how does it operate?<br>What might the circuit look like in one torch compared to the other?<br>Look at the major differences in components between different torches.                             | Introduce the term conductor and insulator.<br>Model what these terms mean and what they are.<br>Where would you see conductors used and why and likewise, where would insulators be used.  | How do we measure brightness of a bulb (i.e. sheets of paper)?<br>What does the word thickness mean?<br>How will be alter the thickness?  |
| <b>Practice</b>   |  | Walk around the classroom and school grounds – write down what you can see that uses electricity. Challenge: what uses electricity at home? Are there any different appliances or similar appliances?  | Discussion during teach.<br>Say a component and children hold that one up and draw on their whiteboards the symbol for that component.<br>Making circuits and identifying and labelling the different components of a circuit.   | Researching together one aspect so that all children have had a chance to practice this skill.<br>Split the class in half, to find at least three reasons why their person invented the lightbulb.  | Drawing the circuit for inside the torch.<br>Different torches and recording when they bulb in the torch stops.  | Creating their own definitions for conductors and insulators.<br>Using information, determine whether a material is a conductor or insulator from what it says or shows – go on to the test these in the next part of the lesson. | Discussion of how to carry out the investigation.<br>Deliberating ways of measuring variables.<br>Carrying out the investigation.   |
| <b>Apply</b>  |  | Organising the appliances into those that need electricity and does that do not.<br>Then subdividing the electrical section into battery powered and mains.<br><br>Challenge: finish the sentence below<br>If there was no electricity, ...      | Using ....., can you create a working circuit.<br>Give them different scenarios to try and independently create a circuit and then draw this in their books.<br>Stick scenario in and draw scientific diagram. Take pictures to put in books.<br>Challenge: rather than a drawing and labelled circuit, give children a written description of a circuit. Will it work? Why or why not?          | Debate across the classroom.<br>Take pictures of the debate.<br><br>Cross curricula link- write a balanced argument.  | Collating the graph as a class and inferring the results (make the graph on purple mash or excel, ect)<br>Is it the same for every torch?<br>Why is this?<br>What impacts the length of time the torch lights for?   | Assess whether or not a range of materials are conductors or insulators and group the materials based on what they have found when experimenting.   | Drawing a graph for the data collected and infer data – what is the general trend and why has this occurred.<br><br>Challenge: what if the thickness was ____, what would happen then?    |
| <b>Reflect</b>  |  | Share sentences with one another.<br>Blue pen another idea.  | Draft a list of non-negotiables in order for a circuit to work.  | Write their opinion on a post-it notes and stick in books or on a shared piece of flipchart paper.  | If I was going camping for three days, what torch should I take? Why?<br>Why does a child's battery powered torch last for less time?  | If there were no conductors, what would happen?<br>Would electricity be continuous if there were no insulators?   | Share the data found.<br>Why did one group get a different result to another?   |
| End of block assessment: <ul style="list-style-type: none"> <li>- Give the children a non-working circuit and ask them to fix it and write how they have managed to fix the problem. Circuit could include an insulator and not a conductor.</li> <li>- Can you create a working head torch or long torch?</li> </ul> |  |  |  |   |  |   |   |

| Medium Term Plan: Forces and Magnets Y3/4  |  |   |  |  |   |
|--|--|---|--|--|---|
| Enquiry Type:  |  | Working Scientifically Concepts:  | Previous Scientific Vocabulary   | New Scientific vocabulary  |   |
| <ul style="list-style-type: none"> <li>Comparative and fair testing</li> <li>Pattern seeking</li> <li>Identifying, classifying and grouping</li> </ul> |  | <ul style="list-style-type: none"> <li>Asking questions</li> <li>Making observations and measuring them</li> <li>Engaging in practical enquiry</li> <li>Recording and presenting evidence</li> <li>Answering questions and concluding</li> <li>Evaluating and predicting</li> <li>Communicating findings.</li> </ul>  | <ul style="list-style-type: none"> <li>materials</li> <li>wood</li> <li>plastic</li> <li>fabric</li> <li>metal</li> <li>glass</li> <li>magnet</li> </ul> | <ul style="list-style-type: none"> <li>force</li> <li>surface</li> <li>magnet</li> <li>attract</li> <li>repel</li> </ul>   | <ul style="list-style-type: none"> <li>poles</li> <li>contract</li> <li>north pole</li> <li>south pole</li> <li>magnetic field</li> </ul> |
| Previous Learning End Point Assessment in this concept:  |  | Previous Learning End Point Assessment in working scientifically concepts:  |  | End Point Assessment Statements:   |   |
| I know that objects are made from different materials (other concepts)   |  | I can ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen).<br>I can sometimes answer these questions.<br>I can answer questions when my teacher explains it through a scenario.<br>I can take measurements by drawing comparisons.<br>I can record my observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.<br>I can record my measurements e.g. using prepared tables, pictograms, tally charts and block graphs.<br>I can classify using simple prepared tables and sorting rings. I can use my experiences of the world to suggest appropriate answers to questions.<br>With help, I can relate these to my evidence e.g. observations I have made, measurements I have taken or information I have gained from secondary sources. |  | <b>Forces and Magnets:</b><br>1. I can compare how things move on different surfaces.<br>2. I can recognise that some forces need contact between two objects, but magnetic forces can act at a distance<br>3. I can observe how magnets attract or repel each other and attract some materials and not others.<br>4. I can describe magnets as having two poles<br>5. I can predict whether two magnets will attract or repel each other, depending on which poles are facing.<br>6. I can group everyday materials on the basis of whether they are attracted to a magnet.<br>7. I can compare and group everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials.<br>8. I can make scientific predictions, using prior knowledge, about unfamiliar materials. |   |

|   | Revisit of knowledge short Afl lesson   | Lesson 1  | Lesson 2   | Lesson 3  | Lesson 4  |
|---|---|---|--|---|---|
| Learning Question   | How do different objects move?  | Which materials create the most friction?   | How does a magnet work?  | Are all materials magnetic?   | Which magnetic is the strongest?  |
| Enquiry Type  |   | Fair and comparative test   | Identifying classifying and grouping.  | Pattern seeking   | Fair and comparative test   |
| Conceptual Knowledge                                      |   | I can compare how things move on different surfaces.  | I can recognise that some forces need contact between two objects, but magnetic forces can act at a distance<br>I can observe how magnets attract or repel each other and attract some materials and not others.<br>I can predict whether two magnets will attract or repel each other, depending on which poles are facing.<br>I can group everyday materials on the basis of whether they are attracted to a magnet.<br>I can compare and group everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials.<br>I can make scientific predictions, using prior knowledge, about unfamiliar materials. |   |   |
| Working Scientifically                                    |   | I can select from a range of practical resources to gather evidence to answer questions generated by myself or the teacher.<br>I can record my measurements e.g. using tables, tally charts and bar charts (given templates when needed). | I can record my observation e.g. using photographs, videos, pictures, labelled diagrams or writing.  | I can draw conclusions based on my evidence and current subject knowledge<br>I can make systematic and careful observations.                  | I can select from a range of practical resources to gather evidence to answer questions generated by myself or the teacher.<br>I can record my measurements e.g. using tables, tally charts and bar charts (given templates when needed).<br>I can identify ways in which I adapted my method as I progressed or how I would do it differently if I repeated the enquiry. |
| Concept flashback (previous phase or earlier in the year) |   | Electricity Y3/4:<br><a href="https://wordwall.net/resource/2901311/science/electric-circuit-labelling-year-4">https://wordwall.net/resource/2901311/science/electric-circuit-labelling-year-4</a>  | Plants Y1/2<br>1. Label the plant<br>2. Define the role of the stem.   | Animals including humans Y1/2:<br>1. Group the animals (pictures and then children to group into mammals, reptiles, ect)<br>2. Define hygiene | Electricity Y3/4<br><a href="https://wordwall.net/resource/2367085/science/year-4-electricity-key-vocabulary">https://wordwall.net/resource/2367085/science/year-4-electricity-key-vocabulary</a>   |
| Review/ Revisit   | Venn diagram: pull, push or twist.<br>Go through what a force is and how it can be categorised as a pull, push or twist and allow children to experiment and complete a Venn diagram. | Push, pulls and twists  | Push, pulls and twists<br>What friction is   | Push, pulls and twists<br>What friction is<br>What a magnet is – true or false low stakes quiz  | Push, pulls and twists<br>What friction is<br>What a magnet is – organising statements  |
| Read  |   | KS2 study book – page 66  | KS2 study book – page 67   | KS2 study book – page 67 revisit  | KS2 study book – page 67 revisit  |


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| Teach    | Can stick in books as prior learning. | What is a material? Look at different materials and discuss what the word friction means.<br>Talk about friction and everyday examples of friction.<br>Introduce the comparative and fair test – how do we conduct these types of enquiry. | Introduce terms: repel, attract, poles, north pole, south pole, etc.<br>Look at what magnets are – where do we see them in everyday life?<br>Go through what the chn find in their exploration (use some magnets with different coloured poles – draw the question of why some are labelled and other aren't.<br>Does this mean that some have poles and others don't? | What is magnetism?<br>Teach the difference between a magnet and magnetic material.<br>Look around the classroom – look at some magnetic materials and model this using the correct terms and using repel and attract.   | What a comparative and fair test is – pick on previous lesson misconceptions based off lesson 1.<br><br>Give a scenario and explain each variable and why.   |
| Practice |                                       | Children to generate as many materials as they can think of in 2 minutes – popcorn it.<br><br>Children to conduct the experiment (use a ramp) to assess the friction of each surface.  | Experiment with magnets.<br>Chn to look at different magnets and observe what they see. Let them use the classroom and ask them to come up with three things they know about magents from exporing.  | Carry out the experiment to see which materials are magnetic. Discuss how you will find this out. Discuss what the chn will need to do and how they can assess this. What if they use a really heavy object? Will that mean they need to alter their approach or not? | Pick the variables and how they will measure each variable.<br>Chn given different scenarios and in groups they must decide which variable is which and must explain to each other why (move around the groups).<br>Conduct the enquiry. |
| Apply    |                                       | Infer the data and results.<br>Which surface created the most friction? Why did this occur?<br>Challenge: Why is friction an important force?  | Draw a scientific image of different findings from scenarios (i.e. two north poles facing one another).<br>Chn to draw what is happening regarding attracting and repelling and how they would be able to alter this to allow the magnets to attract and repel.  | Predict whether a material will be magnetic or not.<br><br>Complete the sentence: I think some materials are attracted to magnet because ...  | After conducting the enquiry, conclude what their data shows and why this pattern might be the case.   |
| Reflect  |                                       | What would happen if a road's surface was made from glass?   | Are magnets always attracted to one another?   | <br>Complete as a class and small group discussion.   | What worked well and what I could improve – do it on post-it notes and share ideas with peers.<br>Moving forward, do a class strength and weakness for comparative and fair testing to determine what the class needs to focus on.       |


**End of block assessment:**  
Give children a poster about magnets and they have to find the 10 errors in the poster and correct these, presenting in a different format (i.e. incorrectly labelled poles)  
Challenge: How are magnets used in everyday life?  
Challenge: Are magnets just as powerful underwater as they are through the air? – plan and investigate (measure working scientifically skills).

| Medium Term Plan: Animals including humans Y3/4  |  |   |  |
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| Enquiry Type:  | Working Scientifically Concepts:   | Previous Scientific Vocabulary  | New Scientific vocabulary  |
| <ul style="list-style-type: none"> <li>Comparative and fair testing</li> <li>Pattern seeking</li> <li>Research using secondary sources</li> <li>Identifying, classifying and grouping</li> </ul>   | <ul style="list-style-type: none"> <li>Asking questions</li> <li>Making observations and measuring them</li> <li>Engaging in practical enquiry</li> <li>Recording and presenting evidence</li> <li>Answering questions and concluding</li> <li>Evaluating and predicting</li> <li>Communicating findings.</li> </ul> | <ul style="list-style-type: none"> <li>adult</li> <li>parent</li> <li>young</li> <li>offspring</li> <li>food</li> <li>water</li> <li>air</li> <li>exercise</li> <li>environment</li> <li>hygiene</li> </ul>   | <ul style="list-style-type: none"> <li>nutrition</li> <li>balanced diet</li> <li>skeletal</li> <li>skull</li> <li>spine</li> <li>vertebrate</li> <li>invertebrate</li> <li>muscle</li> <li>contract</li> <li>relax</li> </ul>  |
| Previous Learning End Point Assessment in this concept:  |  | Previous Learning End Point Assessment in working scientifically concepts:  | End Point Assessment Statements:   |
| <u>Animals including humans</u><br>1. I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.<br>2. I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).<br>3. I can describe the basic needs of animals, including humans, for survival (water, food and air).<br>4. I can describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.<br>5. I can identify which part of the body is associated with each sense. |  | I can ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen).<br>I can sometimes answer these questions.<br>I can answer questions when my teacher explains it through a scenario.<br>I can take measurements by drawing comparisons.<br>I can record my observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.<br>I can record my measurements e.g. using prepared tables, pictograms, tally charts and block graphs.<br>I can classify using simple prepared tables and sorting rings. I can use my experiences of the world to suggest appropriate answers to questions.<br>With help, I can relate these to my evidence e.g. observations I have made, measurements I have taken or information I have gained from secondary sources. | <u>Skeletal System and Muscles:</u><br>1. I can identify that animals, including humans, get nutrition from the foods they eat as they don't produce their own.<br>2. I can identify different parts of the skeletal and muscular systems<br>3. I know that humans and some animals have skeletons and muscles for support, protection and movement.<br>4. I can evaluate the purpose of different features of the skeletal and muscular systems, explaining their importance. |

|   | Revisit of knowledge short Afl lesson  | Lesson 1  | Lesson 2  | Lesson 3  | Lesson 4 and 5  | Lesson 5   | Lesson 6  |
|---|--|---|---|---|---|--|---|
| <b>Learning Question</b>                                | What can I remember the basic functions and needs of animals including humans? | Where do animals, including humans, get their nutrition from?   | What are the different parts of the skeletal system?  | What are joints?  | Do some people have stronger muscles because they use them more?  | How does the cold affect your reaction time?   | What would happen if I didn't have ...?   |
| <b>Enquiry Type</b>                                     |  | Research using secondary sources. Identifying, classifying and grouping   | Identifying, classifying and grouping   | Identifying, classifying and grouping   | Pattern seeking   | Comparative and fair testing   | Research using secondary sources.   |
| <b>Conceptual Knowledge</b>                             | Prior units end point assessment   | I can identify that animals, including humans, get nutrition from the foods they eat as they don't produce their own.                         | I can identify different parts of the skeletal and muscular systems<br>I know that humans and some animals have skeletons and muscles for support, protection and movement.                     | I can identify different parts of the skeletal and muscular systems<br>I know that humans and some animals have skeletons and muscles for support, protection and movement.                     | I can identify different parts of the skeletal and muscular systems<br>I know that humans and some animals have skeletons and muscles for support, protection and movement.     | I can evaluate the purpose of different features of the skeletal and muscular systems, explaining their importance.  | I can evaluate the purpose of different features of the skeletal and muscular systems, explaining their importance.   |
| <b>Working Scientifically</b>                           |  | I can record classifications using Venn diagrams.<br>I can interpret the data to generate simple comparative statements based on my evidence. | I can draw conclusions based on my evidence and current subject knowledge.<br>I can communicate my findings to an audience both orally and in writing, using appropriate scientific vocabulary. | I can draw conclusions based on my evidence and current subject knowledge.<br>I can communicate my findings to an audience both orally and in writing, using appropriate scientific vocabulary. | I can make systematic and careful observations.<br><b>With help,</b> I can present the same data in different ways in order to help answer the question.                        | I can use a range of equipment for measuring length, time, temperature and capacity.<br>I can select from a range of practical resources to gather evidence to answer questions generated by myself or the teacher.<br><b>With help,</b> I can present the same data in different ways in order to help answer the question. | I can use resources to gather evidence for a question.<br>I can answer my own and others' questions based on observations I have made, measurements I have taken or information I have gained from secondary sources. |
| <b>Concept flashback (same year or previous phase).</b> |  | Animals including humans Y1/2:<br>1. Match the part of the body to the sense.<br>2. Define carnivore  | 1. Electricity: show a circuit and ask children to label it.<br>2. Define conductor   | Animals including humans Y1/2:<br>1. Name the animals (birds, amphibians, reptiles, etc).<br>2. Define hygiene  | Forces and Magnets Y3/4<br>1. <a href="https://wordwall.net/resource/3064460/science/magnets-quiz-year-3">https://wordwall.net/resource/3064460/science/magnets-quiz-year-3</a> | Animals including humans Y1/2:<br>1. Why is exercise important?<br>2. Define carnivore, omnivore and herbivore.  | Animals including humans Y1/2:<br>1. Why is hygiene important?<br>2. Define offspring and parent.   |



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|----------------------------|---|--|---|---|---|--|---|
| <b>Review/<br/>Revisit</b> | Low Stakes Quiz on Kahoot.<br>Include<br>- noticing that animals, including humans, have offspring which grow into adults<br>- label the basic parts of the human body  | <a href="http://www.bbc.co.uk/guides/z96vb9q">http://www.bbc.co.uk/guides/z96vb9q</a><br>KS1 clip – bbc bitesize   | Prior lesson – balanced diet.   | What is a skeleton?<br>Label parts of the skeleton.<br>Primary purpose (three reasons) of a skeleton.   | What is a skeleton?<br>Label parts of the skeleton.<br>Primary purpose (three reasons) of a skeleton.<br>Name some joints and where they are in the body.   |  <p>Address any potential misconceptions.<br/>What are muscles and what is a skeleton.</p>  | All content taught so far – low stakes interactive quiz (corners of the room).  |
| <b>Read</b>                | - basic needs of animals<br>- importance of eating healthy, food types and hygiene  | Throughout<br>Client profiles and their home journals  | Funny bones – additional class read during story time.<br>KS2 study book – page 22  | KS2 study book – page 22  | KS2 study book – page 23  | KS2 study book – page 23   | Use books and other secondary resources to gain information and support validation  |
| <b>Teach</b>               | Send children home with a food log. Can collect their findings and/or a family members. Children need to use the smart sugar app or other apps to determine how cubes or teaspoons on sugar they are consuming. | <p>What is diet? Take suggestions. Our diet is everything that we eat and drink. What is Nutrition? It means nourishment or in other words, the food and drink we need to stay healthy.</p> <p>What does the phrase 5-a-day mean? What is sugar? How much sugar should we eat?<br/>What is a balanced diet?</p> <p>Cover vocab: omnivore, herbivore and carnivore.</p> <p>After practice, discuss the food logs the children should have completed and introduce the sugar conversion table.</p> | <p>Talk about what the skeleton is. Show pupils list of jobs placed round the room, e.g. grow, shrink, move, support, protect, breathe. Pupils to collect the three jobs they think a skeleton does.</p> <p>Teach what a skeleton does and look at the basic components and parts of a skeleton.<br/>Use a model heart and lungs for pupils to use cardboard tubes / straws to build the rib cage to show how the skeleton protects our organs.</p> <p>Does every animal need a vertebrate?</p> <ul style="list-style-type: none"> <li>- discussion opportunity and chance for children to show pre-existing knowledge</li> </ul> | <p>Compare an X-ray of an adult and a baby hand. Pupils to describe in pairs to the rest of the group what they have observed.</p> <p>Pupils to circle arms and describe what is happening to the bones. Why is this not the same movement as when we bend and flex our muscles? Use the skeleton to show the two main joints and word cards to introduce names ‘ball and socket’ and ‘hinge’ joint</p> | <p>Introduce what muscles are. Watch video clip from BBC Broadband Learning Zone – ‘Muscles needed for movement’ - <a href="http://www.bbc.co.uk/learningzone/clips/muscles-needed-for-movement/2305.html">http://www.bbc.co.uk/learningzone/clips/muscles-needed-for-movement/2305.html</a></p> <p>Teacher and TA to demonstrate the movement of muscles in pairs using the words ‘contract’ and ‘relax’. Use two lolly pop sticks connected with a pin and attached with an elastic band with muscles to demonstrate an arm movement.</p> <p>Pupils should then mimic the movements of the teacher and TA. (Use push and pull movements).</p> <p>Introduce term tendon and ligament. Optional: show pupils a chicken leg and how muscles are attached by tendons.</p> | <p>What is reaction time?</p> <p>Working scientifically: what a comparative and fair test and how we conduct one of these experiments.</p> <p>Decide (through discussion) how you could test reaction time and how you will measure coldness (ice: hand in ice cubes and dropping a ruler, stacking cubes, writing their name, etc)</p> <p>Recap muscles being used during this process.</p> | Thinking critically – what this means and using knowledge we have to think about alternative scenarios. Teaching how to be a critical friend and posing questions such as why ... or what if .... |
| <b>Practice</b>            |   | <p>Using two hoops children create a venn diagram.<br/>One side says: eats animals and the other eats plants.<br/>Children decide where the labels omnivore, carnivore and herbivore go and then they must place the different animals within the correct section.</p> <p>Take pictures for books.</p>   | <p>Match different bones to a large body outline on the floor<br/>Listen to the song on <a href="http://www.youtube.com/watch?v=ICwLlrQKVcg">http://www.youtube.com/watch?v=ICwLlrQKVcg</a></p> <p>During input use the box biscuits to make a skeleton to see what they know (sizing etc). Can adapt this to other animals (monkey etc).</p>   | <p>Picture of skeletons of different types of mammals for pupils to match names to.</p> <p>Pupils to match pictures of joints to the correct part on a large cut out of a body or skeleton on the floor.</p> <p>Use some of the following science words to talk about joints: bones, Muscles, Joint Pairs Move Relax Contract</p>   | <p>Experience pushing on different objects with different part of the body. Can they feel muscles working? Pupils could design their own push and pull movements to show how muscles ‘contract’ and ‘relax’.</p> <p>Pupils should shout out ‘contract’ when they are contracting and ‘relax’ when they are relaxing.</p>  | <p>Children to write on their tables in whiteboard pen what their variables are and how they are going to make it fair yet comparative.</p> <p>Conduct the research.</p>   | Generic statements: what if there was no sun (for example).   |

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| <p><b>Apply</b></p>  |  | <p>Introduce the sugar conversion table or use the app introduced last lesson called ‘the sugar smart app’ and children are to draw a bar graph to answer the question: <i>How much sugar is in _____’s daily diet at the moment?</i> They should complete a table and draw a bar graph.</p> <p>Differentiate:<br/>Lowers to do a bar graph on the number of fruit and veg consumed each day.<br/>Middle: bar graph for someone of their choice.<br/>Higher: two or more sets of data on one bar graph.</p> <p>Additional client resources are available – choice to use students or the examples given (teacher discretion based on quality of home research).</p> | <p>Colour in a skeleton to identify the job that each part of the skeleton. E.g. different colours for protection, movement, support based off what they have learnt so far.</p> | <p>Children to cut out a skeleton and use split pins and put them in their model skeletons to show where joints are and then label the joints.</p> | <p>Do some people have stronger muscles because they use them more?<br/>- children to record the number of squat jumps (or an exercise similar) and on average the number of hours children exercise for each week<br/>- collate information<br/>- scatter diagram (do together on purple mash on interactive whiteboard to generate data)<br/>- consider: Is there any pattern to your data? What does this show? Was your prediction right? Why might this be?</p> | <p>Infer the results.<br/>Draw a table.- what does this show us?<br/>Why do you think this happens?<br/>What happens to your muscles when they get cold?</p>  | <p>Carousel activity:<br/>What would happen if I didn’t have ...<br/>1. a skeleton<br/>2. muscles<br/>3. joints</p> <p>Or the challenge, use more specific examples as well:<br/>1. a rib cage<br/>2. if sugar was banned<br/>3. if sugar became illegal</p> <p>(just a few examples above)</p> <p>Children can work in groups and hypothesis with reasoning behind their predictions.</p> |
| <p><b>Reflect</b></p>  |  | <p>What did you find?<br/>Why did they consume this sugar?<br/>Did it link to their job?</p>  | <p>In books: If there were no bones, how would the skeleton work?</p>  | <p>In books: Why do we have different joints?</p>  | <div data-bbox="1685 852 2077 1064">  </div> <p>Discussion – exit slip answers also for individual - Afl (pick up misconceptions in the next lesson during the review)</p>   | <p>Working scientifically:<br/>- what worked well?<br/>- what could be improved?</p> <p>Different coloured post-it notes in books and children to stick these in once they have reflected.</p> <p>Class share and discussion first.</p> | <p>Share findings and challenge one another’s thoughts.<br/>Sentence stems: I agree with _____ because<br/>I disagree with _____ because</p>   |
| <p><b>End of block assessment:</b><br/>You are a personal trainer who has different clients and they need advice on what to eat, drink, exercise and how to live healthy.<br/>Can use client profiles from lesson 1.<br/>What should they eat? Why is it important for them to exercise and what muscles will they be using? What do they need to know? Why is a balanced diet useful?</p> |  |   |  |  |  |   |  |

| Medium Term Plan: Teeth Cycle B Y3/4  |  |   |  |
|---|--|---|--|
| Enquiry Type:   | Working Scientifically Concepts:   | Previous Scientific Vocabulary  | New Scientific vocabulary  |
| <ul style="list-style-type: none"> <li>comparative / fair testing.</li> <li>identifying, grouping and classifying.</li> <li>research</li> </ul>           | <ul style="list-style-type: none"> <li>Making observations and measuring them</li> <li>Engaging in practical enquiry</li> <li>Answering questions and concluding</li> <li>Communicating findings.</li> </ul> | <ul style="list-style-type: none"> <li>Herbivore</li> <li>Carnivore</li> <li>Omnivore</li> </ul>  | <ul style="list-style-type: none"> <li>Incisor</li> <li>Canine</li> <li>Molar</li> <li>Premolar</li> <li>Enamel</li> <li>Dentine</li> <li>Root</li> <li>decay</li> </ul> |
| Previous Learning End Point Assessment in this concept:   |  | Previous Learning End Point Assessment in working scientifically concepts:  |  |
| I can describe the importance for humans of hygiene.<br>I can identify and name a variety of common animals that are carnivores, herbivores and omnivores |  | I can make careful observations of the things around me to support identification, comparison and change.<br>I can record my observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.<br>I can use my experiences of the world to suggest appropriate answers to questions.<br>I can use simple secondary sources (such as identification sheets) to name living things. I can describe the characteristics I used to identify a living thing. |  |
| End Point Assessment Statements (conceptual knowledge):   |  | End Point Assessment Statements (working scientifically knowledge):   |  |
| I can identify the different types of teeth in humans and their simple functions<br>I know why we should look after our teeth                             |  | I can record my observation using, labelled diagrams<br>I can recognise when secondary sources can be used to answer questions that cannot be answered through practical work<br>I can draw on prior knowledge to help answer a question.<br>I can select from a range of practical resources to gather evidence to answer questions generated by myself or the teacher.  |  |

|  | Revisit of knowledge short Afl lesson  | Lesson 1   | Lesson 2   | Lesson 3  | Lesson 4   |
|--|--|--|--|---|--|
| Learning Question                                | What do I already know about teeth?  | Are all of our teeth the same shape?   | What do our teeth do?  | Do all animals have the same shaped teeth?  | Why should we look after our teeth?  |
| Enquiry Type                                     |  | Identifying, grouping & classifying  | Research   | Identifying, grouping & classifying   | Comparative /fair testing  |
| Conceptual Knowledge                             | Previous unit assessment end points.   | I can identify the different types of teeth in humans  | I can identify the different types of teeth in humans and their simple functions   | I can identify the different types of teeth in humans and their simple functions  | I can explain why we should look after our teeth   |
| Working Scientifically                           |  | I can record my observation using, labelled diagrams   | I can recognise when secondary sources can be used to answer questions that cannot be answered through practical work  | I can draw on prior knowledge to help answer a question.  | I can draw conclusions based on my evidence and current subject knowledge.   |
| Concept flashback (same year or previous phase). |  | Light Y3/4:<br><a href="https://wordwall.net/resource/2898157/science/light-vocabulary-year-3">https://wordwall.net/resource/2898157/science/light-vocabulary-year-3</a><br>If it's a new concept for Y3's – what do they already know?  | Animals including humans Y1/2:<br>1. Group the animals into mammal, reptile or bird<br>2. Define mammal  | Animals including humans Y1/2:<br>1. What do animals need to survive?<br>2. Define omnivore, carnivore and herbivore.   | Sound Y3/4:<br><a href="https://wordwall.net/resource/7804340/y4-changing-volume">https://wordwall.net/resource/7804340/y4-changing-volume</a><br>If it's a new concept for Y3's – what do they already know?  |
| Review/ Revisit                                  | Revisit learning from Y1/2<br>Herbivores, carnivores & omnivores:  |  | Types of teeth quiz:<br><a href="https://www.proprofs.com/quiz-school/playquiz/?title=label-types-teeth">https://www.proprofs.com/quiz-school/playquiz/?title=label-types-teeth</a>  | Herbivores, carnivores & omnivores quiz:<br><a href="https://www.zoo.com/quiz/is-this-animal-a-carnivore-herbivore-omnivore">https://www.zoo.com/quiz/is-this-animal-a-carnivore-herbivore-omnivore</a>   |  |
| Read   | <a href="https://www.educationquizzes.com/ks1/science/animals-carnivores-herbivores-and-omnivores/">https://www.educationquizzes.com/ks1/science/animals-carnivores-herbivores-and-omnivores/</a>          | <a href="https://www.coolkidfacts.com/teeth-facts/">https://www.coolkidfacts.com/teeth-facts/</a> Milk Teeth section only  | Science The Study Book p25   | Collins Study book p 27   | Science The Study Book p26   |
| Teach  |  | <a href="https://www.bbc.co.uk/bitesize/topics/z27kng8/article/zsp76yc">https://www.bbc.co.uk/bitesize/topics/z27kng8/article/zsp76yc</a><br>Why do we have teeth? What is their purpose?<br>Why do we lose our milk teeth? Children have 20 teeth: 8 incisors, 4 canines and 8 molars [show labelled diagram - <b>incisors</b> , <b>canines</b> and <b>molars</b> ]. Adults have 32 teeth including wisdom teeth. Babies' jaws are too small to hold all these teeth. | Show the children a picture of the different types of teeth<br><a href="https://theconversation.com/curious-kids-why-do-we-lose-our-baby-teeth-111911">https://theconversation.com/curious-kids-why-do-we-lose-our-baby-teeth-111911</a><br>Explain the purpose of each tooth. | Would herbivores, carnivores and omnivores have the same shaped teeth? Why?<br>Revisit tooth maps. Which group are we?<br>How would a herbivores teeth differ? How would a carnivores teeth differ?   | <a href="https://k8schoollessons.com/human-tooth-structure-for-kids/">https://k8schoollessons.com/human-tooth-structure-for-kids/</a><br>Show children diagram and explain the function of each part of the tooth (info on page!)  |
| Practice   | How to keep ourselves healthy – looking after our teeth<br><a href="https://www.educationquizzes.com/ks2/personal-social-and-health-">https://www.educationquizzes.com/ks2/personal-social-and-health-</a> | Give children mirrors and allow time for looking at and feeling their own teeth. How many teeth have you got? How many new ones (permanent teeth)? How many baby teeth (milk teeth)? Can they count their total number of teeth?<br>Discuss/Feedback.  | Return to their tooth map. Why are the teeth located in those positions in the mouth?  | Predict: create a tooth map for a herbivore and a carnivore.<br>After the task watch:<br><a href="https://www.bbc.co.uk/bitesize/topics/zxfrwmn/article/z4w3bdm">https://www.bbc.co.uk/bitesize/topics/zxfrwmn/article/z4w3bdm</a><br>Compare drawings to:<br><a href="http://curriculumforexcellencescience.weebly.com/uploads/6/9/6/9/6969384/teeth_structure_function_diet.pdf">http://curriculumforexcellencescience.weebly.com/uploads/6/9/6/9/6969384/teeth_structure_function_diet.pdf</a> - p5 &6 | Show children the resources and explain that you would like to them to plan a fair test to find out what the effect of different food and drink is on the teeth and whether toothpaste can protect the tooth from decay. (explain that the shell is like the enamel on their teeth) <a href="https://www.science-sparks.com/how-to-keep-teeth-healthy/">https://www.science-sparks.com/how-to-keep-teeth-healthy/</a><br>Decide how to record results.<br>Predict what will happen to the shell with each liquid |



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|-------------|---|---|--|--|--|----------|----------|--|--|--|--|---|--|
| Apply       | <a href="#">education/oral-health/</a>                | Children create a labelled tooth map of their own mouths using a mirror         | Decide how to present the information they have found out about teeth eg <table><tr><td>Name</td><td>Appearance</td><td>Location</td><td>Function</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> | Name   | Appearance   | Location | Function |  |  |  |  | Group together photographs of animal teeth into herbivore, carnivore and omnivore. Explain their choices. | Set the experiment up and leave.<br>After 3 days take the eggs out of the liquid and observe closely (use magnifying glasses). Record results and compare to predictions.<br>Were your predictions correct?<br>What do the results tell us? How can we use the results of the investigation to help us make choices about diet and oral hygiene? |
| Name        |   | Appearance  | Location   | Function   |  |          |          |  |  |  |  |   |  |
|             |   |   |  |  |  |          |          |  |  |  |  |   |  |
| Reflect     |   | Mix, pair share: Do your tooth maps look the same? Why might they be different? | Round Robin: In tables share information about the teeth   | Are any of our teeth more important than others? What effect would it have on us if we lost certain teeth eg incisors/canines? | Was their test successful? How could they improve on this if they were to complete the investigation again |          |          |  |  |  |  |   |  |
| End of unit | Create a fact file about teeth for a dental practice. |   |  |  |  |          |          |  |  |  |  |   |  |

| Medium Term Plan: Food and digestion Cycle B Y3/4  |  |  |  |   |  |
|--|--|--|--|---|--|
| Enquiry Type:  |  | Working Scientifically Concepts:   |  | Previous Scientific Vocabulary  | New Scientific vocabulary  |
| <ul style="list-style-type: none"> <li>identifying, grouping and classifying</li> <li>research</li> <li>observation over time</li> </ul>   |  | <ul style="list-style-type: none"> <li>Making observations and measuring them</li> <li>Engaging in practical enquiry</li> <li>Answering questions and concluding</li> <li>Communicating findings.</li> </ul> |  | <ul style="list-style-type: none"> <li>Herbivore</li> <li>Omnivore</li> <li>Carnivore</li> <li>Habitat</li> </ul> | <ul style="list-style-type: none"> <li>Prey</li> <li>Producer</li> <li>Predator</li> <li>Consumer</li> <li>Digestion</li> <li>Ileum</li> <li>Colon</li> <li>Duodenum</li> <li>Villi</li> <li>Anus</li> <li>Oesophagus</li> <li>saliva</li> </ul> |
| Previous Learning End Point Assessment in this concept:  |  |  | Previous Learning End Point Assessment in working scientifically concepts:   |   |  |
| 1. I can describe the importance for humans of eating the right amounts of different types of food<br>2. I can describe how animals obtain their food using the idea of a simple food chain<br>3. I can identify and name a variety of common animals that are carnivores, herbivores and omnivores. |  |  | I can answer questions when my teacher explains it through a scenario.<br>I can make careful observations of the things around me to support identification, comparison and change.<br>I can use simple secondary sources (such as identification sheets) to name living things. I can describe the characteristics I used to identify a living thing. |   |  |
| End Point Assessment Statements (conceptual knowledge):  |  |  | End Point Assessment Statements (working scientifically knowledge):  |   |  |
| 1. I can identify the basic parts of the digestive system in humans.<br>2. I can describe the functions of the basic parts of the digestive system.<br>3 I can construct and interpret a variety of food chains.<br>4. I can identify (from food chains) the producers, prey and predators           |  |  | 1. I can answer questions that my teacher asks by thinking about what I already know.<br>2. I can make systematic and careful observations.<br>3. I can recognise when secondary sources can be used to answer questions that cannot be answered through practical work.<br>4. I can use resources to gather evidence for a question.                  |   |  |

|  | Revisit of knowledge short Afl lesson  | Lesson 1  | Lesson 2  | Lesson 3  | Lesson 4   |
|--|--|---|---|---|--|
| Learning Question                                | What do I already know about digestion and food?   | What is the digestive system?   | What does the digestive system do?  | What is a food chain?   | Who is the prey?   |
| Enquiry Type                                     |  | Research  | Observation over time   | Research  | Identifying, grouping and classifying.   |
| Conceptual Knowledge                             | Previous unit assessment end points.   | I can identify the basic parts of the digestive system in humans.   | I can describe the functions of the basic parts of the digestive system.  | I can construct and interpret a variety of food chains.   | I can identify (from food chains) the producers, prey and predators  |
| Working Scientifically                           |  | I can answer questions that my teacher asks by thinking about what I already know.  | I can make systematic and careful observations.   | I can recognise when secondary sources can be used to answer questions that cannot be answered through practical work.  | I can use resources to gather evidence for a question.   |
| Concept flashback (same year or previous phase). |  | Animals including humans Y3/4 (Teeth):<br>1. Which type of tooth is this? (insert a picture)<br>2. Define decay.  | Animals including humans Y1/2:<br>1. Match the body part to the sense<br>2. Define hygiene  | Animals including humans Y3/4 (Teeth):<br>1. Why are molars located at the back (rear) of the mouth?<br>2. Define enamel  | Animals including humans Y3/4 (Teeth):<br>1. Where are incisors located in your mouth and why?<br>2. Define premolar   |
| Review/ Revisit                                  | Revisit learning from Y1/2<br>Teeth<br>Healthy diet<br>Food chains<br>Habitats   | Flashback: Teeth quiz<br><a href="https://kidshealth.org/en/kids/teethquiz.html">https://kidshealth.org/en/kids/teethquiz.html</a>  | Flashback - sound:<br><a href="https://wordwall.net/resource/11873958/year-4-science-mid-point-sound-quiz">https://wordwall.net/resource/11873958/year-4-science-mid-point-sound-quiz</a>   | Flashback: Herbivore, omnivore & carnivore<br><a href="https://gcequiz.com/quiz/question/ks1-herbivores-carnivore-and-omnivore-quiz--461207e0">https://gcequiz.com/quiz/question/ks1-herbivores-carnivore-and-omnivore-quiz--461207e0</a> | Flashback: Habitats<br><a href="https://www.dkfindout.com/uk/quiz/animals-and-nature/habitats-quiz/">https://www.dkfindout.com/uk/quiz/animals-and-nature/habitats-quiz/</a> |
| Read   |  | Science The Study Book p28  | Collins The Study Book p26  | The Study Book p30 & 31   | Collins The Study Book p24 & 25  |
| Teach  | Revisit previous unit on teeth:<br><a href="https://www.youtube.com/watch?v=06jdchuxrlm">https://www.youtube.com/watch?v=06jdchuxrlm</a><br><br>HEALTHY DIET | <a href="https://www.bbc.co.uk/bitesize/topics/z27kng8/articles/z2rx82">https://www.bbc.co.uk/bitesize/topics/z27kng8/articles/z2rx82</a><br><a href="https://www.bbc.co.uk/bitesize/topics/z27kng8/articles/z9wk7p3">https://www.bbc.co.uk/bitesize/topics/z27kng8/articles/z9wk7p3</a><br>Watch and discuss. Clarify new vocabulary and practice saying the words out loud. | <a href="https://www.bbc.co.uk/bitesize/topics/z27kng8/articles/z9wk7p3">https://www.bbc.co.uk/bitesize/topics/z27kng8/articles/z9wk7p3</a><br><a href="https://www.bbc.co.uk/bitesize/topics/zv9qhyc/articles/zdkfvk7">https://www.bbc.co.uk/bitesize/topics/zv9qhyc/articles/zdkfvk7</a><br>Watch and discuss. Explain that they are going to recreate the digestive system | <a href="https://www.bbc.co.uk/programmes/p0177whs">https://www.bbc.co.uk/programmes/p0177whs</a><br><br>Watch and discuss.   | <a href="https://www.bbc.co.uk/bitesize/topics/zbn9g/articles/zwbtxsg">https://www.bbc.co.uk/bitesize/topics/zbn9g/articles/zwbtxsg</a><br><br>Clarify new vocabulary.       |

|             |  |   |  |   |   |
|-------------|--|---|--|---|---|
| Practice    | <a href="https://www.educationquizzes.com/ks2/science/healthy-eating/">https://www.educationquizzes.com/ks2/science/healthy-eating/</a><br><br>FOOD CHAINS<br><a href="https://www.bbc.co.uk/cbbc/quizzes/top-class-food-chains">https://www.bbc.co.uk/cbbc/quizzes/top-class-food-chains</a><br><br>HABITATS<br><a href="https://www.cserc.org/sierra-fun/games/match-habitat/">https://www.cserc.org/sierra-fun/games/match-habitat/</a> | <a href="https://www.olivehackney.com/wp-content/uploads/2020/04/Year-4-Science-Digestive-System-Labeling-2-levels-with-Answers.pdf">https://www.olivehackney.com/wp-content/uploads/2020/04/Year-4-Science-Digestive-System-Labeling-2-levels-with-Answers.pdf</a> | <a href="http://www.kitses.com/animation/swfs/digestion.swf">www.kitses.com/animation/swfs/digestion.swf</a><br>Pupils recreate the digestive system.<br><br>Step 1 [ <b>mouth</b> ]: put a cracker into their zip-lock bag. Start crushing it up to represent the <b>teeth</b> . What does our mouth produce to make food easier to swallow? <b>Saliva</b> : softens the food and starts breaking it down (add water to the bag). The food then travels down the <b>oesophagus</b> .<br><br>Step 2 [ <b>stomach</b> ]: what does the stomach have that helps break down food? Acid and digestive juices break down the food (add orange juice). Continue gently squeezing the bag to represent the stomach churning the food to break it down. This is completed in the <b>duodenum</b> .<br><br>Step 3 [ <b>ileum</b> – small intestine]: proteins, fats and vitamins are absorbed from the food. The walls of the ileum are lined with tiny finger like <b>villi</b> expanding the surface area so it can absorb more.<br><br>Step 4 [ <b>colon</b> – large intestine]: absorbs the water from the remaining waste to be used by the body before it is excreted through the <b>anus</b> . Pour the stomach contents for each table into a pair of tights, lay to rest over kitchen roll. The liquid will pass through the tights and be absorbed by the kitchen roll, leaving only the <b>waste</b> . | <a href="https://www.twinkl.co.uk/resource/t2-s-160-food-chain-sorting-game">https://www.twinkl.co.uk/resource/t2-s-160-food-chain-sorting-game</a><br>In pairs complete the game.              | <a href="https://www.bbc.co.uk/bitesize/topics/zbnnb9q/articles/zsphrwx">https://www.bbc.co.uk/bitesize/topics/zbnnb9q/articles/zsphrwx</a><br><a href="https://www.bbc.co.uk/bitesize/topics/zbnnb9q/articles/zcgbjty">https://www.bbc.co.uk/bitesize/topics/zbnnb9q/articles/zcgbjty</a><br><a href="https://www.bbc.co.uk/bitesize/topics/zbnnb9q/articles/z93vdxs">https://www.bbc.co.uk/bitesize/topics/zbnnb9q/articles/z93vdxs</a><br><br>In pairs children work on laptops to complete the food chain challenge |
|             |  | In pairs can you create a representation of the digestive system? (white t shirts and fabric pens/sharpies).  | Recap the four main parts of the digestive system:<br>1. Mouth<br>2. Stomach/Duodenum<br>3. Ileum<br>4. Colon<br>Ask pupils to tell each other what happens in each section using their t shirts from the last lesson.   | Create their own food chain like this:<br><a href="https://www.consortiumeducation.com/classroom-ideas/ks2-food-chains">https://www.consortiumeducation.com/classroom-ideas/ks2-food-chains</a> | Choose a habitat: create their own food chains using paper plates, identifying the producer, prey, predator   |
|             |  | Mix pair share: Talk the other pair through their representation. Give feedback to each other.  | Mix pair share: Talk the other pair through their representation. Give feedback to each other.   | Round Robin. Share their food chains. Give feedback.  | Create a class display of the food chains. Choose three to look at and talk through. Are they accurate?   |
| End of unit | Eureka have been in touch to say that they need a new exhibition to explain how we digest food. In groups children plan an interactive exhibition.   |   |  |   |   |

### Medium Term Plan: Rocks Cycle A Y3/4

| Enquiry Type:  | Working Scientifically Concepts:   | Previous Scientific Vocabulary – other concepts  |  | New Scientific vocabulary   |
|--|--|--|--|---|
| <ul style="list-style-type: none"> <li>Identifying, grouping and classifying</li> <li>Comparative testing</li> <li>Research</li> </ul>   | <ul style="list-style-type: none"> <li>Making observations and measuring them</li> <li>Engaging in practical enquiry</li> <li>Answering questions and concluding</li> <li>Communicating findings.</li> </ul> | <ul style="list-style-type: none"> <li>sorting</li> <li>similarities</li> <li>differences</li> <li>hard</li> <li>soft</li> <li>rough</li> <li>smooth</li> <li>bendy</li> <li>shiny</li> </ul>  | <ul style="list-style-type: none"> <li>classify</li> <li>properties</li> <li>flexible</li> <li>stiff</li> <li>tough</li> <li>brittle</li> <li>transparent</li> <li>opaque</li> <li>waterproof</li> <li>dull</li> </ul> | <ul style="list-style-type: none"> <li>Permeable</li> <li>Impermeable</li> <li>Fossils</li> <li>Organic matter</li> <li>Fossilisation</li> <li>Permeability</li> <li>Sedimentary</li> <li>Igneous</li> <li>metamorphic</li> </ul> |
| Previous Learning End Point Assessment in this concept:  |  | Previous Learning End Point Assessment in working scientifically concepts:   |  |   |
| <a href="#">Link to Materials Y1/2</a><br>I can describe the simple properties of a variety of everyday materials.   |  | I can answer questions when my teacher explains it through a scenario.<br>I can use my experiences of the world to suggest appropriate answers to questions.<br>I can record my measurements e.g. using prepared tables, pictograms, tally charts and block graphs.<br>I can make careful observations of the things around me to support identification, comparison and change. |  |   |
| End Point Assessment Statements (conceptual knowledge):  |  | End Point Assessment Statements (working scientifically knowledge):  |  |   |
| 1. I can compare and group together different kinds of rocks on the basis of their appearance and physical properties (e.g. colour, texture)<br>2. I can describe how fossils are formed when they have been trapped in rocks and explain the process (fossilisation).<br>3. I can recognise that soils are made from rocks and organic matter |  | 1. I can draw on prior knowledge to help answer a question.<br>2. I can draw conclusions based on my evidence and current subject knowledge.<br>3. I can make systematic and careful observations<br>4. I can decide how to record and present evidence.   |  |   |

|   | Revisit of knowledge short Afl lesson   | Lesson 1  | Lesson 2   | Lesson 3   | Lesson 4  |
|---|---|---|--|--|---|
| Learning Question   | What do I know about materials?   | What are rocks and soils made from?   | Are soils all the same?  | Are rocks all the same?  | What is a fossil?   |
| Enquiry Type  |   | Comparative testing   | Identifying, grouping and classifying  | <ul style="list-style-type: none"> <li>Identifying, grouping and classifying</li> <li>Comparative testing</li> </ul>   | Research  |
| Conceptual Knowledge                                      | Previous unit assessment end points.  | I can recognise that soils are made from rocks and organic matter   | I can compare and group together different kinds of soil on the basis of their appearance and physical properties (e.g. colour, texture)   | I can compare and group together different kinds of rocks on the basis of their appearance and physical properties (e.g. colour, texture)  | I can describe how fossils are formed when they have been trapped in rocks and explain the process (fossilisation).   |
| Working Scientifically                                    |   | I can decide how to record and present evidence.  | I can make systematic and careful observations.  | I can draw conclusions based on my evidence and current subject knowledge.   | I can draw on prior knowledge to help answer a question.  |
| Concept flashback (previous phase or earlier in the year) |   | Flashback – Light & sound:<br><a href="https://wordwall.net/resource/29151906/science/light-recap">https://wordwall.net/resource/29151906/science/light-recap</a><br><a href="https://wordwall.net/resource/27302494/science/sound">https://wordwall.net/resource/27302494/science/sound</a><br>If it's a new concept for Y3's – what do they already know? | Flashback – teeth & digestion:<br><a href="https://wordwall.net/resource/6655139/science/y3-label-teeth">https://wordwall.net/resource/6655139/science/y3-label-teeth</a><br><a href="https://wordwall.net/resource/29086620/science/digestive-system-test">https://wordwall.net/resource/29086620/science/digestive-system-test</a> | Flashback - states of matter:<br><a href="https://wordwall.net/resource/8653787/science/y3-changing-state">https://wordwall.net/resource/8653787/science/y3-changing-state</a><br><a href="https://wordwall.net/resource/7185953/science/y3-water-cycle-diagram">https://wordwall.net/resource/7185953/science/y3-water-cycle-diagram</a><br>If it's a new concept for Y3's – what do they already know? | Rocks & soils:<br><a href="https://wordwall.net/resource/28458937/science-words-rocks">https://wordwall.net/resource/28458937/science-words-rocks</a><br><a href="https://wordwall.net/resource/29050279/soil">https://wordwall.net/resource/29050279/soil</a>  |
| Review/ Revisit   | Revisit learning from Y1/2  | Any gaps in knowledge from the revisited learning.  | Previous lessons and gaps in knowledge from revisited lessons.   | Previous lessons and gaps in knowledge from revisited lessons.   |   |
| Read  | Show the children a picture ask them to choose an object and describe the materials it is made from and the | Key Stage 2 The Study Book p 43   | Key Stage 2 The Study Book p 41 & 42   | Key Stage 2 The Study Book p 41 & 42   | Collins KS2 Science Study Book p 56   |
| Teach   |   | Watch the clips<br><a href="https://www.bbc.co.uk/bitesize/topics/zjty4wx/article/s/ztvbk2p">https://www.bbc.co.uk/bitesize/topics/zjty4wx/article/s/ztvbk2p</a><br><a href="https://www.bbc.co.uk/bitesize/topics/zjty4wx/article/s/zmx48xs">https://www.bbc.co.uk/bitesize/topics/zjty4wx/article/s/zmx48xs</a>   | Watch the clip<br><a href="https://www.youtube.com/watch?v=BDQwY044RXM">https://www.youtube.com/watch?v=BDQwY044RXM</a><br>Why is it important for gardeners to know what type of soil there is an area of the garden?   | Watch the clip<br><a href="https://www.bbc.co.uk/bitesize/clips/zt3yvk7">https://www.bbc.co.uk/bitesize/clips/zt3yvk7</a><br>Are all rocks affected by weather?  | Watch the clip<br><a href="https://www.bbc.co.uk/bitesize/topics/z9bbkqt/article/s/z2ym2p3#:~:text=As%20more%20layers%20of%20sediment,original%20bone%20called%20a%20fossil.">https://www.bbc.co.uk/bitesize/topics/z9bbkqt/article/s/z2ym2p3#:~:text=As%20more%20layers%20of%20sediment,original%20bone%20called%20a%20fossil.</a> |



|                               |  |   |  |  |  |
|-------------------------------|--|---|--|--|--|
| <b>Practice</b>               | properties of the materials.   | <p>Explain to the children that you have collected four different soil samples from around the school (sandy, clay, chalk and peat)</p> <p>Give each group the four samples</p> <p>In pairs use the magnifying glasses to compare the soils and ask them to decide how to record how their soil sample looks (colour, grain size, etc.), smells, and feels.</p> | <p>Ask students to half fill the jam jars with the soil they want to investigate, cover with water and put the lid back on tight. Shake for at least 5 minutes. Sit the jar down on a steady surface and leave to settle.</p> <p>After at least an hour, look at the levels of the soil in the jars.</p> <p>Ask students to identify the clay, silt, sand and organic content of each jam jar.</p> <p>(Clay soils are heavy, high in nutrients, wet and cold in winter and baked dry in summer</p> <p>Sandy soils are light, dry, warm, low in nutrients and often acidic Silt soils are fertile, light but moisture-retentive, and easily compacted</p> <p>Loams are mixtures of clay, sand and silt that avoid the extremes of each type</p> <p>Peat soils are very high in organic matter and moisture</p> <p>Chalky soils are very alkaline and may be light or heavy)</p> | <p>Explain that we are going to test a variety of rocks to see if the weather would affect them over time.</p> <p>We need to find out if the rocks are permeable or impermeable and if they are hard or soft.</p> <p>Ask children to plan a fair test to test the hardness using sandpaper or a nail.</p> <p>And a test for permeability using water.</p> <p>Children decide how to record results.</p> <p>In pairs carry out the test and record results.</p> | <p>Explain that we are going to have a go at making our own fossils.</p> <p>Use the slideshow to work through each step.</p> <p><a href="https://www.edenproject.com/sites/default/files/2021-07/great-fossil-hunters-lesson-slide-show-eden-project.pdf">https://www.edenproject.com/sites/default/files/2021-07/great-fossil-hunters-lesson-slide-show-eden-project.pdf</a></p> <p>Children draw a prediction of what their fossil will look like.</p> |
| <b>Apply</b>                  |  | Compare the results for the different samples. How were they similar/different?   | <p>How well do you think a plant would grow in each soil?</p> <p>How could you improve it to help plants grow better?</p>  | <p>Children order rocks from softest to hardest and most permeable to least permeable.</p> <p>Which rock would be most suitable for making a monument or gravestone out of and why? Use your results to explain.</p>   | <p><b>THE NEXT DAY:</b></p> <p>Before you begin this lesson ensure that the clay surrounding the fossils has dried out properly!</p> <p>Today you are going to become fossil hunters (palaeontologists).</p> <p>Excavate the fossils.</p> <p>Do they look like the prediction?</p>   |
| <b>Reflect</b>                |  | Mix, pair, share. Did they children have similar results?   | <p>One stray: Have the children made the same decisions. If not why? If yeas why?</p>  | Was your test fair? Are your results viable?   | <p>Which part of the process went really smoothly for them? Why do they think this was? Which part of the process was most tricky to complete? How could they improve on this if they were to make another fossil? How could they adjust the method to make it easier next time?</p>   |
| <b>End of unit assessment</b> | <p>A gardener has been in touch for help. He isn't sure where to plant the plants in a garden. He has taken four soil samples from different areas. Give the children a selection of soils labelled A, B, C &amp; D. Ask the children to identify the best soils for the plant information given.</p> <p>He would also like to build a water feature but is unsure of which rock to use. Ask the children to identify the best rock to use from a selection.</p> |   |  |  |  |