

## Science Medium term plan Animal Including Humans Y3

Pupils should be taught to:

- Identify that animal, including humans, need the right types of amount of nutrition, and that they cannot make their own food- they get nutrition from what they eat.
- Identify that human and some other animals have skeletons and muscles for support, protection and movement.

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

'Working scientifically' is related to the teaching of substantive science content, examples show how scientific methods and skills might be linked to specific elements of the content:



During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:




- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings




**Prior Learning:**




- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1)
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1)
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets. (Y1)
- Find out and describe the basic needs of animals, including humans, for survival. (Y2)
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2)



**Future Learning:**





- Describe the simple functions of the basic parts of the digestive system in humans. (Y4)
- Identify the different types of teeth in humans and their simple functions. (Y4)
- Construct and interpret a variety of food chains, identifying producers, predators and prey (Y4)
- Recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function. (Y6)

<p>Key questions (Show how content and concepts link) Differentiated Learning Objectives</p>	<p>Teaching and learning activities (Linked directly to objectives)</p>	<p>Resources (To help pupils reach the learning objectives)</p>	<p>Written and non-written Outcomes (Assessment including homework's)</p>
<p>1)What is important in a diet for animals and humans?</p> <p><b>Science capital:</b> <i>What kinds of food do you eat? Why do you eat them?</i></p> <p><b>Science Working scientifically Skills:</b> Asking questions /</p>   <p><b>observing</b></p> <p><b>Science Enquiry Type:</b> <b>Pattern seeking</b></p>  <p><i>Pupils will understand food can contain range of nutrients that they need for the body to stay healthy. They will also understand that plants make their own food. A piece of food can provide a range of nutrients.</i></p> <p><b>Misconception:</b> Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.</p>	<p><b>Science reasoning task:</b> explorify What's going on? <a href="https://explorify.uk/en/activities/w-hats-going-on/takeaway-dinner">https://explorify.uk/en/activities/w-hats-going-on/takeaway-dinner</a></p> <p><i>Funny Bones story-what do you think they eat to stay healthy and nutritional? What do humans need to survive? What do animals need to survive?</i></p> <p><b>Activity 1: Read Funny bones as stimulus- Discuss</b> what to animals and humans needs to survive? What is diet? What is nutrition?</p> <p><b>Activity 2:</b> Discuss food chains and different diets of herbivores, omnivores and carnivores.</p> <p><b>Activity 3:</b> analyse client diary of what they ate. Pupils to identify how much sugar is their diet daily. Create a bar chart of the information.</p>	<p><b>Activity 1:</b> PowerPoint of book.</p> <p><b>Activity 2:</b> classify/ Venn diagram</p> <p><b>Activity 3:</b> client information and bar chart template</p>	<p><b>Homework:</b> keeping a food diary</p>

<p><b>2) What is the nutritional value of different meals?</b></p> <p><b>Science capital:</b> what foods do you eat most of? Do you think it is nutritional?</p> <p><b>Science Working scientifically Skills:</b> Asking questions /</p>   <p><b>observing</b></p> <p><b>Science Enquiry Type:</b> Classify</p>  <p><i>Pupils will understand the eat well plate (from y2) they will use the food labels and understand that some foods can be good for you but it depends on the nutritional value i.e. how much sugar/salt they have- looking at saturated and unsaturated fats.</i></p> <p><b>Misconception:</b> Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.</p>	<p><b>Science reasoning task: What if- explorify</b> <a href="#">You only ate chips? - Explorify</a></p> <p><i>Funny Bones story- what do humas? Mammals eat?</i></p> <p><b>Activity 1:</b> PowerPoint- discuss Eatwell plate and how to use it for balanced diet.</p> <p><b>Activity 2:</b> In pairs answer truth and false statements related to nutrition and eat well plate.</p> <p><b>Activity 3:</b> look through food labels and prove or disprove statements using evidence from food labels.</p>	<p><b>Activity 1:</b> you tube link</p> <p><b>Activity 2:</b> Whiteboard</p> <p><b>Activity 3:</b> variety of food labels.</p>	<p>Reasoning – explaining reason using personal experiences</p> <p><b>Homework-</b> collecting different types of rocks from different environments. What do you notice?</p>
<p><b>3) What happens to bones if you have no calcium in your diet?</b></p> <p><b>Science capital:</b> What do you use your bones for? Why do you think it is important to keep your bones strong?</p>	<p><b>Science reasoning task: Zoom in and zoom out- explorify</b> <a href="#">Strange stripes - Explorify</a></p> <p><i>Funny Bones story- they moving a lot , what do bones need?</i></p> <p><b>Activity 1:</b> plan experiment each step on post it note format.</p>	<p><b>Activity 1:</b> post it planning sheets.</p> <p><b>Activity 2:</b> beakers, bones, vinegar, milk, etc.</p> <p><b>Activity 3:</b> Observe over time and write conclusion and evaluate.</p>	

<p><b>Science Working scientifically Skills:</b></p>  <p>???</p> <p><b>Science Enquiry Type: Observation over time</b></p>  <p><i>Pupils will understand that calcium is an important mineral, and it helps with bone strength. They will also understand that the body needs a range of vitamins and minerals.</i></p> <p><b>Misconception:</b> Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.</p>	<p><b>Activity 2:</b> set up experiment – bones in vinegar, bones in nothing, and observe overtime.</p> <p><b>Activity 3:</b> Observe over time and write conclusion and evaluate.</p>		
<p><b>4)Do all animals have skeletons?</b></p> <p><b>Science capital Think about your pet animals, think about if they have bones or not. How do you know?</b></p> <p><b>Science Working scientifically Skills:</b></p> <p>???</p> <p><b>Science Enquiry Type: Classify</b></p>  <p><i>Pupils will understand that some animals</i></p>	<p><b>Science reasoning task: Odd one out- explorify</b> <a href="https://explorify.uk/en/activities/odd-one-out/funny-bones">https://explorify.uk/en/activities/odd-one-out/funny-bones</a></p> <p><i>In the Funny Bones story, they characters all have a skeleton. I wonder if that is true of all animals? What words come to mind when you think of the word 'skeleton' in science?</i></p> <p><b>Activity 1:</b> PowerPoint discuss vertebrate and invertebrate</p> <p><b>Activity 2:</b> classify various skeleton into vertebrates and invertebrates.</p> <p><b>Activity 3:</b> powerPoint discuss invertebrates can be divided into exoskeleton- endoskeletons.</p>	<p><b>Activity 1:</b> PowerPoint / cards of x-ray</p> <p><b>Activity 2:</b> animals classification cards</p> <p><b>Activity 3:</b> PowerPoint/ classification cards</p>	<p>Reasoning – explaining reason using personal experiences</p> <p>Homework : pets/ animals in their environment and to</p>

<p>have vertebrates, and some are invertebrates. They will be able to classify them.</p> <p><b>Misconception:</b> Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.</p>			
<p><b>5) How does skeleton help us move?</b></p> <p><b>Science capital: What activities do you do which use more of your bones?</b></p> <p><b>Science Working scientifically Skills:</b></p>  <p><b>Science Enquiry Type: pattern seeking</b></p>  <p><i>Pupils will understand patterns in collecting data and</i></p> <p><b>Misconception:</b> Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.</p>	<p><b>Science reasoning task: Odd one out- explorify</b> <a href="https://explorify.uk/en/activities/zoom-in-zoom-out/light-as-air">https://explorify.uk/en/activities/zoom-in-zoom-out/light-as-air</a> Funny Bones story- how do the animals and mammals get around? What helps humans? What helps mammals?</p> <p><b>Activity 1:</b> PowerPoint -what do we use our bones for?</p> <p><b>Activity 2:</b> Plan investigation: Can people with longer femurs jump further?</p> <p><b>Activity 3:</b> complete conclusion and evaluation</p>	<p><b>Activity 1:</b> PowerPoint <b>Activity 2:</b> investigation plans on post it notes. format <b>Activity 3:</b> feedback – class discussion of what they found out, evaluate what could they do to improve experiment next time.</p>	<p>Reasoning – explaining reason using personal experiences</p> <p>Are pupils able to work scientifically using various skills during planning and testing stage?</p>
<p><b>6) What makes our muscles move?</b></p>	<p><b>Science reasoning task: ODD ONE OUT</b> <a href="https://explorify.uk/en/activities/odd-one-out/hanging-out">https://explorify.uk/en/activities/odd-one-out/hanging-out</a></p>	<p><b>Activity 1:</b> <a href="http://www.bbc.co.uk/education/clips/zpp6n39">http://www.bbc.co.uk/education/clips/zpp6n39</a> Making model – templates of arm model. Describing how muscles move using the model.</p>	<p>Reasoning – explaining reason using personal</p>

<p><b>Science Working scientifically Skills:</b></p>  <p><b>Science Enquiry Type: Problem solving</b></p>  <p><i>Pupils will understand the different muscles at work in their arm through creating a model.</i></p> <p><b>Misconception:</b> Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.</p>	<p><b>Activity 1:</b> Watch clip and discuss what did they notice about the muscles moving?  <a href="http://www.bbc.co.uk/education/clips/zpp6n39">http://www.bbc.co.uk/education/clips/zpp6n39</a></p> <p><b>Activity 2:</b> think about how human arm moves. Identify muscle which is called your bicep and triceps through activity. Lit bottle and pupils to work out which muscles are moving within their arm.</p> <p><b>Activity 3:</b> Now we are going to do a bit of exercise with our leg muscles but first we need to warm them up. Do some warmup leg stretches. We are going to do some swap jumps. Put one leg a little in front of the other, squat down with your fingertips on the floor. When I beat the drum, jump to swap your legs over so the other leg is in front and squat once more with fingertips on the ground. Do as many as you feel you can without your leg muscles hurting. Stop, just as they begin to ache and count how many you do. Once you've stopped just sit on the floor. Count as you beat the drum. Stop when everyone has finished. Record the number of jumps done by each child on the Swap Jumps Record Sheet. Who found it hard? Where does it ache? Why were some people able to do more jumps? There will probably be some discussion around who is good at sport. <b>Activity 4:</b> Did ..... do more jumps because they are good at sport or because their muscles are more used to physical activity? Gather ideas. How could we investigate this? Hopefully discussion will raise the question of how much regular sport or physical activity the swap jump champs do.</p>	<p><b>Activity 2:</b> bottle or something for pupils to pick up.</p> <p><b>Activity 3:</b> Outdoor space</p>	<p>experience s</p>
<p><b>7) Who was Marie Curie and why was she significant?</b></p> <p><b>Science capital: Have you ever had an Xray? Do you know why they are useful?</b></p> <p><b>Science Working scientifically Skills:</b></p>  <p><b>Science Enquiry Type: Research</b></p>  <p><i>Pupils will understand the significant work of</i></p>	<p><b>Science reasoning task: What if</b>  <a href="https://explorify.uk/en/activities/watch-if/my-bones-were-bendy">https://explorify.uk/en/activities/watch-if/my-bones-were-bendy</a></p> <p><b>Activity 1:</b> Watch clip and discuss key facts about the scientist they have learnt in think pairs.</p> <p><b>Activity 2:</b> Use secondary resources/ book/ internet to find out information to their own questions about scientist.</p> <p><b>Activity 3:</b> Write up facts in fact file template.</p>	<p><b>Activity 1:</b>  <a href="https://www.youtube.com/watch?v=6JFRiQQm_s">https://www.youtube.com/watch?v=6JFRiQQm_s</a></p> <p><a href="https://www.youtube.com/watch?v=jbS2mD2Erek">https://www.youtube.com/watch?v=jbS2mD2Erek</a></p> <p><b>Activity 2:</b>  <a href="#">Marie Curie Fact Sheet (teacher made) - Twinkl</a>  <a href="#">LKS2 Marie Curie Differentiated Reading Comprehension Activity (twinkl.co.uk)</a></p> <p><b>Activity 3:</b>  <a href="#">Marie Curie Flip Book Biography (teacher made) - Twinkl</a>  <a href="#">Marie Curie Fact File Template, Marie Curie (teacher made) (twinkl.co.uk)</a></p>	<p>Reasoning – explaining reason using personal experience s</p>

*Marie Curie in terms of medicine and X-rays. They will be able to use secondary resources to research and read facts about Marie Curie to write fact file about her.*

**Misconception:**

Certain whole food groups like fats are 'bad' for you, specific foods, like cheese are also 'bad' for you, diet and fruit drinks are 'good' for you, snakes are similar to worms, so they must also be invertebrates and invertebrates have no form of skeleton.