

**Science Medium term plan**  
**Animals Including Humans (Digestive system) Y4**

Pupils should be taught to:

- describe the simple functions of the basic parts of the digestive system in humans
- identify the different types of teeth in humans and their simple functions
- construct and interpret a variety of food chains, identifying producers, predators and prey

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 that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2 - Animals, including humans)
- Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)
- Identify that animal, including humans, need the right types and amount of nutrition, and



**Future Learning:**


- Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. (Y6 - Animals, including humans)
- Recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function. (Y6 - Animals, including humans)
- Describe the ways in which nutrients and water are transported within animals, including humans. (Y6 - Animals, including humans)


<p>that they cannot make their own food; they get nutrition from what they eat. (Y3 - Animals, including humans)</p>			
Key questions (Show how content and concepts link) Differentiated Learning Objectives	Teaching and learning activities (Linked directly to objectives)	Resources (To help pupils reach the learning objectives)	Written and non-written Outcomes (Assessment including homework's)
<p>1)What is the incredible journey the food takes inside our bodies?</p> <p><b>Science capital:</b> <i>What appliances do you use most of? Make a tally and class bar chart.</i></p> <p><b>Science Working scientifically Skills:</b> Asking</p>  <p>questions / observing</p> <p><b>Science Enquiry Type Research</b></p> 	<p><b>Science reasoning task: explorify ODD ONE OUT:</b> <a href="https://explorify.uk/en/activities/odd-one-out/dropping-by">https://explorify.uk/en/activities/odd-one-out/dropping-by</a></p> <p><b>Activity 1: Little Mole who knew it was none of his business</b> stimulus- Discuss what questions they may have about the story linked to digestive system/digestion.</p> <p><b>Activity 2:</b> Demonstration: ch to watch the way food is digested.</p> <p><b>Activity 3:</b> Role play the digestive process using the demonstration just watched.</p> <p><i>Pupil will understand food enters the body through the mouth. Digestion starts when the teeth start to break the food down. Saliva is added and the tongue rolls the food into a ball. The food is swallowed and passes down the oesophagus to the stomach. Here the food is broken down further by being churned around and other chemicals are added. The food passes into the small intestine. Here nutrients are removed from the food and leave the digestive system to be used elsewhere in the body. The rest of the food then passes into the large intestine. Here the water is removed for use elsewhere in the body. What is left is then stored in the rectum until it leaves the body through the anus when you go to the toilet. Humans have four types of teeth: incisors for cutting; canines for tearing; and molars and premolars for grinding (chewing).</i></p>	<p><b>Activity 1:</b> Book.</p> <p><b>Activity 2:</b> Word card, digestive bowls, ingredients, labels for different part of the body.</p> <p><b>Activity 3:</b> Word cards and picture prompts to help with the re-enactment of the digestive system.</p> <p><b>Misconception:</b> Some children may think:</p> <ul style="list-style-type: none"> <li>• arrows in food chains mean 'eats'</li> <li>• The death of one of the parts of a food chain or web has no, or limited, consequences on the rest of the chain</li> <li>• There is always plenty of food for wild animals</li> <li>• Your stomach is where your belly button is food is digested only in the stomach</li> <li>• When you have a meal, your food goes down one tube and your drink down another.</li> <li>• The food you eat becomes "poo" and the drink becomes "wee".</li> </ul>	<p><b>Homework:</b> Make a tally of the favourite foods all family members and friends enjoy. Use this to create a bar chart.</p>

<p><b>2)What is the incredible journey the food takes inside our bodies? (Writing explanation)</b></p> <p><b>Science capital:</b> <i>What appliances do you use most of? Make a tally and class bar chart.</i></p> <p><b>Science Working scientifically Skills:</b></p>  <p><b>Science Enquiry Type Research</b></p>  <p><i>Pupil will understand food enters the body through the mouth. Digestion starts when the teeth start to break the food down. Saliva is added and the tongue rolls the food into a ball. The food is swallowed and passes down the oesophagus to the stomach. Here the food is broken down further by being churned around and other chemicals are added. The food passes into the small intestine. Here nutrients are removed from the food and leave the digestive system to be used elsewhere in the body. The rest of the food then passes</i></p>	<p><b>Science reasoning task: ODD ONE OUT:</b>  <a href="https://explorify.uk/en/activities/odd-one-out/fuel-up">https://explorify.uk/en/activities/odd-one-out/fuel-up</a></p> <p><b>Activity 1: Recap</b> the demonstration and explain today they are to write an explanation text to explain the process of human digestion to mole.</p> <p><b>Activity 2:</b> use pictures from last lesson and discuss what the different stages were using scientific vocabulary.</p> <p><b>Activity 3:</b> use research (books/ internet links) to research the different parts to use in explanation.</p> <p><b>Activity 3:</b> Model writing the explanation using research.</p>	<p><b>Activity 1:</b> PowerPoint</p> <p><b>Activity 2:</b> use pictures from last lesson and discuss what the different stages were using scientific vocabulary.</p> <p><b>Activity 3:</b> <a href="#">What is the digestive system? - BBC Bitesize</a>  <a href="#">Science with Grammarsaurus - The Digestive System - YouTube</a></p> <p><b>Activity 3:</b> templates for some pupils others to write their explanation using their research.</p> <p><b>Misconception:</b>          Some children may think:</p> <ul style="list-style-type: none"> <li>• arrows in food chains mean 'eats'</li> <li>• The death of one of the parts of a food chain or web has no, or limited, consequences on the rest of the chain</li> <li>• There is always plenty of food for wild animals</li> <li>• Your stomach is where your belly button is</li> <li>• food is digested only in the stomach</li> <li>• When you have a meal, your food goes down one tube and your drink down another.</li> <li>• The food you eat becomes "poo" and the drink becomes "wee".</li> </ul>	<p>Reasoning - explaining why and using prior knowledge.</p>
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<p>into the large intestine. Here the water is removed for use elsewhere in the body. What is left is then stored in the rectum until it leaves the body through the anus when you go to the toilet.</p>			
<p><b>3)What clue can faeces give us about animal and human diet?</b></p> <p><b>Science capital:</b> <i>What do you eat? Are you diets balanced? How do you know?</i></p> <p><b>Science Working scientifically Skills:</b></p> <p><b>Science Enquiry Type Research</b></p> <p><i>Pupils will understand the digestive process and that our body can convey messages through excrement and sickness.</i></p>	<p><b>Science reasoning task: ODD ONE OUT:</b>  <a href="https://explorify.uk/en/activities/odd-one-out/fuel-up">https://explorify.uk/en/activities/odd-one-out/fuel-up</a></p> <p><b>Activity 1:</b> Recap the story- identify the different types of poo- Wellcome Genome representative visit- whose poo- activity.</p> <p><b>Activity 2:</b> Dissect owl pellets- identifying what the animal has eaten.</p> <p><b>Activity 3:</b> Recreated human faeces to observe and dissect to find out about ancient human diets. <b>Misconception:</b> Some children may think:</p> <ul style="list-style-type: none"> <li>• When you have a meal, your food goes down one tube and your drink down another.</li> <li>• The food you eat becomes “poo” and the drink becomes “wee”</li> </ul>	<p><b>Activity 1:</b> story/ Wellcome Genome member for 20 min discussion.</p> <p><b>Activity 2:</b> owl pellets- dissection sheet</p> <p><b>Activity 3:</b> playdough different ancient animal faeces with fact cards.</p>	<p>Science reasoning: explaining why.</p>
<p><b>4)How does the food we eat affect our health?</b></p> <p><b>Science capital:</b> <i>What do you eat? Are you diets balanced? How do you know?</i></p>	<p><b>Science reasoning task: Zoom in and Zoom out:</b>  <a href="https://explorify.uk/en/activities/zoom-in-zoom-out/healthy-skin">https://explorify.uk/en/activities/zoom-in-zoom-out/healthy-skin</a></p> <p><b>Activity 1:</b> Recap previous learning – PowerPoint to discuss the different food types and importance of balance diet.</p>	<p><b>Activity 1: PowerPoint</b>  <a href="https://www.bbc.co.uk/bitesize/clips/ztr3cdm">https://www.bbc.co.uk/bitesize/clips/ztr3cdm</a></p> <p><b>Activity 2:</b> the food pyramid for reference when labelling food groups with the meals. (identify breakfast, lunch and dinner)</p>	<p>Science reasoning: explaining why.</p> <p>Homework: food diary and identifying the different food types within</p>

<p><b>Science Working scientifically Skills:</b></p>  <p><b>Science Enquiry Type Research</b></p> <p><i>Pupils will understand the digestive process and that our body can convey messages through excrement and sickness.</i></p>	<p><b>Activity 2:</b> Label their favourite foods and identify that the different food groups.</p> <p><b>Misconception:</b> Some children may think:</p> <ul style="list-style-type: none"> <li>• When you have a meal, your food goes down one tube and your drink down another.</li> <li>• The food you eat becomes “poo” and the drink becomes “wee”.</li> </ul>		<p>their meals.</p>
<p><b>5) Why do we need teeth to be different sizes?</b></p> <p><b>Science capital:</b> <i>What do you notice about your teeth and mouth? How do you use your teeth? If you have a pet, how does it have teeth/fangs/ how does it use them?</i></p> <p><b>Science Working scientifically Skills:</b></p>  <p><b>Science Enquiry Type</b></p> <p><b>Problem solving</b> <i>Pupils will understand the names of different teeth and their purpose. They will also understand about teeth and their role</i></p>	<p><b>Science reasoning task:</b> <a href="https://explorify.uk/en/activities/odd-one-out/smile-please">https://explorify.uk/en/activities/odd-one-out/smile-please</a></p> <p><b>Activity 1:</b> Why do we have teeth? What is their purpose? Give children mirrors (or use their laptops to take pictures of their teeth at different angles.) 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? Discuss/Feedback. Why do we lose our milk teeth? Children have 20 teeth: 8 incisors, 4 canines and 8 molars [show labelled diagram - <b>incisors, canines</b> and <b>molars</b>.]. Adults have 32 teeth including wisdom teeth. Babies’ jaws are too small to hold all these teet</p> <p><b>Activity 2:</b> <a href="https://www.bbc.co.uk/education/clips/zwbmcwx">https://www.bbc.co.uk/education/clips/zwbmcwx</a> Watch and discuss animals and their different teeth-discussing what is the same and different with human teeth.</p>	<p><b>Activity 1</b> Mirrors / laptops: <a href="http://www.childrensuniversity.manchester.ac.uk/interactives/science/teethandeating/typesofteeth/">www.childrensuniversity.manchester.ac.uk/interactives/science/teethandeating/typesofteeth/</a></p> <p><b>Activity 2:</b> Buse playdough/ clay to create their own teeth from the picture taken earlier</p> <p><b>Activity 3:</b> Label teeth diagram using scientific words and some explaining the different types of teeth.</p>	<p>Science reasoning: explaining why.</p>

<p>in the digestive system.</p>			
<p><b>6)) What happens when we don't brush teeth?</b>  <b>Science capital:</b> <i>How often have you been to the dentist? How do you use your teeth?</i></p> <p><b>Science Working scientifically Skills:</b></p>  <p><i>Pupils will understand different foods and how they affect teeth- in particular sugar.</i></p>	<p><b>Science reasoning task:</b>  <a href="https://explorify.uk/en/activities/odd-one-out/smile-please">https://explorify.uk/en/activities/odd-one-out/smile-please</a></p> <p><b>Activity 1:</b> Recap previous lesson-Watch video about what plaque is and how it decays our teeth.</p> <p><b>Activity 2:</b> As a group to post it note plan an experiment.</p> <p><b>Misconception:</b>          Some children may think:</p> <ul style="list-style-type: none"> <li>• When you have a meal, your food goes down one tube and your drink down another.</li> <li>• The food you eat becomes "poo" and the drink becomes "wee"</li> </ul>	<p><b>Activity 1:</b> See BBC website.</p> <p><b>Activity 2:</b> post-it notes experiment template and different liquids beakers, Record results over a week. During next lesson write conclusion and evaluate experiment.</p>	<p>Science reasoning: explaining why.</p>
<p><b>6)Which is the best toothpaste to remove plaque? (SCIENTIST: Washington Sheffield)</b></p> <p><b>Science capital:</b> What toothpaste do you use? Why do you use that particular toothpaste?</p> <p><b>Science Working scientifically Skills:</b></p>	<p><b>Science reasoning task:</b>  <a href="https://explorify.uk/en/activities/mystery-bag/sparkling-smiles">https://explorify.uk/en/activities/mystery-bag/sparkling-smiles</a></p> <p><b>Activity 1:</b> Discuss the scientist – share PowerPoint- <b>Washington Sheffield</b></p> <p><b>Activity 2:</b> Plan an investigation as a group – PowerPoint – Which toothpaste removes the most plaque?</p> <p><b>Activity 3:</b> Record, conclude and represent the results in a bar chat.</p>	<p><b>Activity 1: Write a fact file about Washington Sheffield</b></p> <p><b>Activity 2:</b> Post- it Plan experiment- PowerPoint- tiles (to represent teeth) different toothpastes to test out.</p> <p><b>Activity 3:</b> Excel/ Graph paper for bar chart          **Write a letter to Sainsbury to share findings.</p>	

<p><b>Science</b> <b>Enquiry Type</b> <b>Comparative</b></p>  <p><i>Pupils will understand plaque and how it affects the teeth. To be able to plan an experiment changing one variable.</i></p>			
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