**Year 4 Science Curriculum – Spring 2**

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| **Theme: Digestion and Food Chain** |
| **Curriculum objectives** | **Vocabulary** | **Links across the curriculum** |
| To describe the simple functions of the basic parts of the digestive system in humans.To identify the different types of teeth in humans and their simple functions.To construct and interpret a variety of food chains, identifying producers, predators and prey. | **Contract** | To make smaller by drawing together | **Flow** | Continuous movement | DT* Cooking and consuming food:
* Vegetable stir fry
* Spicy chickpea pot
* Chocolate and courgette muffins

English* NCR – birds of prey
* Explanation text – how does the body digest food?
* Oracy
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| **Grind** | To make something smaller or smoother by rubbing, crushing or wearing down. | **Key (legend)** | A guide to what the symbols or colours in a diagram represent. |
| **Model** | Something to show how a system or process works | **Decompose** | The process where bacteria and worms, break down natural materials into tiny pieces that help new plants grow |
| **Anus** | The muscle which is relaxed in order to release poo | **Canine** | A curved, pointed tooth |
| **Digestion** | The process of breaking down food into smaller parts so the body can use it for energy and growth | **Large intestine** | A wider tube leading from the small intestine; this is where water is absorbed into the blood |
| **Oesophagus** | The tube connecting the mouth to the stomach | **Rectum** | The part of the large intestine where poo is stored |
| **Tier 3 vocabulary** | [SNAP23\_Y4\_M4\_digestion\_ms.docx (live.com)](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fstatic.collins.rhapsode.com%2FSnap_Science%2FTeaching_Science%2FYear_4%2FSNAP23_Y4_M4_digestion_ms.docx&wdOrigin=BROWSELINK) |  |  |
| **Prior knowledge:** *What specifically have pupils learned that is relevant to this unit that they are building upon?* | **Future knowledge:** *What specifically will pupils learn in the future that is relevant to this unit?* |
| Children have previously learnt:- that animals need to eat to stay alive (Year 2 Biology – Animals, including humans).- that a balanced diet keeps animals, including humans, healthy (Year 3 Biology – Animals, including humans).- that the feeding relationships of animals can be shown as a food chain (Year 2 Biology – living things and their habitats).- about the way animals are interdependent in ecosystems (Year 4 Biology – Living things and their habitats). | This prepares children for later learning:* about the circulatory system and how it links to the digestive system (Year 6 Biology – Animals including humans)
* about adaptation and evolution (Year 6 Biology – Evolution and inheritance).
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| **Lesson Sequence** | **Key Knowledge** | **Key Skills** |
| Where does all the food we eat go? | * Food is essential for survival, gives us energy to do things, and helps our bodies to work properly and to grow.
* Digestion is how our bodies get energy and nutrients from the food we eat.
* Children sequence the parts of the digestive tract: mouth, oesophagus, stomach, small intestine, large intestine, rectum and anus.
* Food (and drink) enters the body at the mouth. Digestion begins here as the teeth chew and crush food into small pieces which can be managed by the digestive system.
* The food is squeezed down the oesophagus by muscular contractions. When we swallow, the oesophagus squeezes our food down the pipe. The squeeze starts at the top and travels down so that all the food goes down the pipe (not up), just like getting the last bit of toothpaste out of the tube requires a squeeze that starts at one end.
* The food then enters the stomach where the next stage of digestion occurs. The food gets mixed and mashed up with stomach juices, which help break it down even more.
* The partly digested food then enters the small intestine where digestion continues and the nutrients our bodies need can be absorbed into our blood. The small intestine is a really long tube which is coiled up into our abdomen. It is three and half times as long as your body! It is called ‘small’ because it is narrow.
* The parts of the food not needed by our body then enter the large intestine where water is absorbed into our blood.
* The parts of the food not needed by our body are then stored in the rectum until we release it through our anus when we go to the toilet and do a poo. We are aware when our rectums fill up, but we can choose when we release it as the anus is a muscle.
 | Working scientifically:* recording findings using simple scientific language, [drawings,] labelled diagrams, [keys, bar charts, and tables]
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| What teeth do humans have? | * The different types of teeth: incisor, canine, molar.
 | Working scientifically:* making systematic and careful observations [and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers]
* recording findings using simple scientific language, [drawings,] labelled diagrams, keys, [bar charts, and tables]

Scientific enquiry type:* identifying and classifying
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| What do teeth do in the digestive system? | * The digestive functions of the different types of teeth: incisors for cutting, canines for tearing and molars for grinding.
* Label a diagram to show the different types of teeth and their functions.
 | Working scientifically:* making systematic and careful observations [and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers]
* recording findings using simple scientific language, [drawings,] labelled diagrams, [keys, bar charts, and tables]

Scientific enquiry type:* pattern seeking
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| What happens to food after we put it into our mouths? | * Food is broken down mechanically and chemically and then absorbed into the body.
* Where nutrients and water are absorbed.
 | Working scientifically:* reporting on findings from enquiries, including oral and written explanations, [displays] or presentations of results and conclusions
* using straightforward scientific evidence to answer questions or to support their findings
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| What do animals eat? | * Draw food chains with more than two links to show the flow of food, including a food web.
* How living things in a habitat are dependent on each other for survival.
* Predator is an animal that eats another animal. All predators are carnivores or omnivores because they eat other animals as their food. The animal that is eaten by the predator is their prey. For example, a rabbit is the prey of a fox.
* Some animals will get their food from one animal (so they are a predator) and also be the food of another animal (so they can be prey at the same time). For example, a worm is eaten by a bird so the bird is a predator. That same bird could be eaten by another predator such as a cat. So, in this feeding relationship, the bird is also prey. The cat is not eaten by anything else so it is the top predator – the last animal in that food chain.
* Revisit the terms ‘food chain’, ‘producer’ and ‘consumer’, which were introduced in Year 2 (Module 1, Local habitats).
* Remind children that all food chains start with a producer.
* Explain the following: Producers make their own food using sunlight. Plants are producers. All animals, including humans, cannot make their own food so they have to get food by consuming parts of other living things. Animals are consumers.
* Carnivores, herbivores or omnivores. Establish that we have incisors, canines and molars which gives us the ability to eat meat and vegetables, so we are omnivores (even vegetarians).
 | Working scientifically:* using straightforward scientific evidence to answer questions or to support their findings

Scientific enquiry type:* research using secondary sources
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| What do animal teeth tell us? | * Palaeontologists can tell a lot about the food eaten by extinct animals as the teeth are sometimes preserved as fossils, which provide valuable evidence.
* Molars of a Mastodon were large with cone-shaped bumps for crushing twigs, bark and other plant materials. Ask them to classify the Mastodon (herbivore). (Palaeontologists think the tusks were mostly used for fighting.)
* The teeth of a Smilodon (sabre-toothed cat) were all sharp – even the back teeth. They had massive canines. Ask the children to classify the Smilodon (carnivore).
* Castoroides (giant beaver) had long incisors with blunt, rounded tips (not good for cutting wood, unlike modern beavers), and molars that were suited to grinding soft aquatic plants. Ask children to classify the Castoroides (herbivore).
 | Working scientifically:* identifying differences, similarities [or changes] related to simple scientific ideas and processes

Scientific enquiry type:* identifying and classifying
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| **Themes and links** |
| **Themes (types of enquiry)** | **Where these are covered:** | **Links across the science curriculum** |
| **Observation over time** | * Lesson 2
* Lesson 4
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| **EYFS**  |  |
| **1**  | Animals (vertebrates) |
| **2**  | Changing materials |
| **3**  | Movement and nutrition for the human body |
| **4**  |  |
| **5**  | Separating mixtures and changing materials |
| **6** | Electricity – changing circuits |

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| **Research** | * Lesson 2
* Lesson 1
* Lesson 3
* Lesson 6
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| **Pattern seeking** | * Lesson 5
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| **Comparative and fair testing** | * Lesson 4
* Lesson 5
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| **Identifying, classifying and grouping** | * Lesson 2
* Lesson 3
* Lesson 4
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