Science – Year 4

Content- Animals, including humans

How important are teeth to digestion?

NC objectives - **areas of study**	End point of area of study	Vocabulary		
		Basic	Adventurous	Technical
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.	Pupils understand what happens to food once it has entered their body. They are able to name the parts of the digestive system and explain the role of each as food journeys through the body. Different types of teeth are named, their main function is explained and their role as part of the digestive system is understood. Pupils name different plants and animals, retrieving prior knowledge from prior year groups. They know what animals need to eat to survive and are able to identify plants and animals as consumers, prey and predators. Applying their knowledge of teeth and digestion, pupils can identify and explain the diet of different animals from the teeth in their jaws.	herbivore, carnivore, omnivore, mouth, teeth,		Digestive system, digestion, small intestine, large intestine, stomach, rectum, oesophagus, saliva, incisors, canines, molars, predator, prey, producer,

Knowledge

Substantive Knowledge

Retrieval

- Children know the names of different animals and their young and the lifecycle of some. They are able to identify different types of animals and describe them as herbivores, carnivores or omnivores. They know the basic needs of animals including humans and for humans the importance of a balanced diet, exercise and good hygiene.
- Children know the purpose of the skeleton and muscles and the importance of a healthy diet for growth and nutrition.

Lesson 1

Incisors, canines. Molars, teeth, tooth

- To know the names of the three types of teeth and their functions.

Disciplinary Knowledge

Working as a biologist they develop knowledge of working as a dentist. consolidation of what working as a Biologist means- Why is what we have learned today important to our understanding of the study of animals including humans?

Scientific concepts to explore through animals, including humans.

Similarities and differences – What is the same and what is different?

Pupils discuss the observable differences identified, along with similarities and changes seen. Why do different animals have different teeth?

identify and name the different types of teeth and the similarities and differences in the jaws of different animals including humans, naming the different type of teeth, their purpose and how they link to their diet through research and observation.

• Know that a human has three types of teeth – incisors, canines and molars – and that these each perform different functions • Know that incisors slice food, canines tear food (especially meat) and that molars grind food • Know that children develop an initial set of teeth which are gradually replaced between the ages of 6 and 12 • Children are introduced to the names of the different types of teeth and their function. They explain the different types of teeth and their role to others. • Children know they must look after their teeth and that adult teeth are for life. • PSHE link- observe eggs in different liquids to see the effect of different drinks on enamel- egg shell is the closest thing to enamel to explore this. What does this tell us about how we should care for teeth and link to healthy diet- retrieval. Looking at the Big Question and discussing the importance of oral hygiene. **Lesson 2** Herbivore, carnivore, omnivore • To know how teeth determine the diet of an animal. • Know the diet of different animals from the teeth in their jaws. • Children to look at the different sets of teeth of different animals- identify the different types of teeth and how they link to diet. • Retrieval of different diets of animals and application of knowledge to the teeth functions to match animals and their teeth. **Lesson 3** Digestive system, digestion, small intestine, large intestine, stomach, rectum, oesophagus, saliva, • To know the simple functions of the basic parts of the digestive system. • Know that food passes through the body with the nutrients being extracted and the waste products excreted, and that this process is called digestion.	Explore similarities and differences in the diets of animals in different habitats and how the food they need is provided for them to enable survival. Asking relevant questions about different types of teeth and the impact of diet upon them. Pupils identify organs within the body associated with digestion and ask questions about the function of each one. **Fair Testing-** Observations over time of what happens to egg shells in liquid to show damage similar to that of teeth changing just one variable. Setting up simple practical enquiries to compare the effect of different liquids on teeth- through the egg shell investigation. considering how this can be set up as a fair test with the same amount of liquid being used and eggs being left in it for the same period of time. Children work as scientists making systematic and careful observations throughout the investigation. Pupils observe the practical demonstration of digestion and observe the processes involved. **Use of evidence- What evidence can be collected and how will it improve our knowledge?** Using observations of the egg shells in liquids pupils can explain what happens using the evidence they have collected. create experiences for children to re-create the digestive system to make links between experience and facts. Recording findings using simple scientific language, labelled diagrams and photo evidence of the effect of liquids on the egg shells. Using labelled diagrams, children explain the digestive process naming organs correctly and the correct sequence of digestion. Working as scientists they use results to draw simple conclusions, asking questions and make predictions about the effect other liquids may have- this could inform future investigations for pupils to test out their own ideas. **Patterns-** Are foods that are high in energy always high in sugar? To support knowledge about decay, children need to know that it is the sugar which damages our teeth and the impact it can have on us. Children apply learning by reporting findings from investigation, orally and written explanations of results and conclusions- for example informing others of why dental health is so important and some of the contributing factors to poor dental hygiene and tooth care.

• Know that the process of digestion involves breaking complex foodstuffs into simpler building blocks that can be absorbed by the body. • Know that the process of digestion begins with food being chewed in the mouth by the teeth and saliva added • Know that food is squeezed down the oesophagus towards the stomach in a wave-like action called peristalsis • Know that the stomach releases acid and enzymes to continue breaking down the food; the stomach is an organ; an organ is a part of living thing that is self-contained and has a specific important job • Know that further enzymes and bile break down the food further as it moves through the duodenum towards the small intestine • Know that the small intestine adds more enzymes and then absorbs the nutrients • Know that the large intestine absorbs water from the undigested food • Know that undigested food is stored in the rectum before being excreted through a muscle called the anus • Children are introduced to the digestive process following the journey of food through the body. • Lesson 4- building on lesson 3 • Digestive system, digestion, small intestine, large intestine, stomach, rectum, oesophagus, saliva, • To understand the process of digestion. • As above- children know each step of the digestive process, recall knowledge from the previous week and the role of each part of the body. • Children recreate the digestive system using food squeezed through a tight, supporting their oral explanations of what is happening in each step. Lesson 5 Predator, prey, producer To know how energy is passed on in a food chain. • Know that a food chain traces the path of energy through a habitat	

- Know that the arrows in a food chain show the direction that energy is travelling through a habitat
- Know that all energy for a food chain initially comes from the Sun which is absorbed and turned into energy by plants which are called producers
- Know that consumers take in energy by eating
- Know that an animal that is eaten by another is called prey, and that an animal that eats other animals is called a predator
- Know that the first consumer in a food chain is called a primary consumer, the second is called a secondary consumer and above it is called a tertiary consumer
- Children are introduced to food chains, they are explained to them and they can answer questions about the transfer of energy using them.

Lesson 6

Predator, producer, prey

To know how to construct and interpret a variety of food chains, identifying producers, predators and prey.

Retrieval of key learning from lesson 5. Children are now able to sequence animals in a food chain, identify the predator, prey and producer and construct their own food chains using what they know about diet and teeth of animals.

Discussing what would happen when an animal goes missing within the food chain.

Concepts

Biology	Chemistry	Physics	

SKILLS

1. Compare	2. Explore	3. Identify	4. describe	5. classify
6. Question	7. observe	8. test	9. record	10. research
				.

ASSESSMENT

KNOW MORE, REMEMBER MORE, DO MORE...
In this unit of learning, progress has been made when a learner knows more. This ‘distance travelled’ from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit.