Holly Park Learning Organiser

Year 2 - Science

The Human Body What is the digestive system and how does it work?

Prior Knowledge:

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- Identify and name a variety of plants and animals in their habitats, including microhabitats.

Key Vocabulary	
teeth	hard structures in the mouth used to bite and chew through food teeth
carnivore	an animal that eats other animals
herbivore	an animal that eats plants
omnivore	an animal that eats other animals and plants
incisors	flat teeth at the front of the mouth that are used to bite into food
canines	pointed teeth that help with ripping and tearing •
molars	the large teeth at the very back of the mouth used to grind and chew food
enamel	– the protective layer of a tooth enamel • – • –
root	the part of a tooth that holds it in place in the jaw root
plaque	a sticky coating made by germs that can harm the teeth and gums
digestive system	organs working together to break down food into smaller pieces
oesophagus	the organ that pushes food from the mouth to the stomach
rectum	part of the large intestine where waste exits the body

National Curriculum Objectives:

- Identify the different types of teeth in humans and their simple functions.
- Describe the simple functions of the basic parts of the digestive system in humans.

Essential Knowledge:

Children build on their knowledge of animal groups, focusing on common carnivores, herbivores and omnivores.

They should now begin to explore how an animal's diet influences the structure of its teeth.

y learn the names of the four main types of teeth in the mouth. Children are introduced to the terms incisor, canine, premolar and molar teeth.

, children explore what the digestive system is. Children learn that digestion begins in the mouth.

, children learn about the layers of the teeth. They use the terms enamel, pulp and root. Children should identify that enamel is the protective layer around the outside of the tooth. The pulp can be described as the sensitive inner part of the tooth and the roots hold the tooth in the jaw

children look at how bacteria within the mouth feed on sugar and contribute to plaque build-up. Children should be reminded that plaque build-up can cause decay in the tooth if teeth are not brushed regularly.

children explore the digestive system and the route food takes through the body, starting with the teeth. This step introduces children to the oesophagus, stomach, small intestine, large intestine and rectum.

, children should be able to define digestion and describe the route taken by food from when it is bitten to when it reaches the rectum.

Key Questions:

- Which types of animal hunt and eat other animals? • What does a carnivore eat? • How are carnivores' teeth suited to their diet? • What does a herbivore eat? • How are herbivores' teeth suited to their diet? • What does an omnivore eat? • How are omnivores' teeth suited to their diet? • Why do animals have different types of teeth?
- • Which type of tooth is used for biting into food? • Which type of tooth helps with ripping and tearing? • Which type of tooth guides food towards the molars at the back of the mouth? • Which is the largest type of tooth? • Which type of tooth is sharp and pointed? • Why do humans have different types of teeth? • What would happen if humans only had molars?
- • What is "enamel"? • What does enamel do? • What is underneath enamel? • Why is enamel important? • What are "germs"? • How do germs in the mouth affect tooth enamel? • How is a build-up of "plaque" formed?
- • What does "digestion" mean? • When does the digestion process begin? • Which teeth bite off large pieces of food? • What is the role of "saliva" in digestion? • What route does food take through the body? • Why does the stomach contain acid? • What is the difference between the large and small intestines?

Working Scientifically:

- Identifying differences, similarities or changes related to simple scientific ideas and processes.
- Asking relevant questions and using different types of scientific enquiries to answer them
- Setting up simple practical enquiries, comparative and fair tests.
- 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.

SEND Core Knowledge:

- children build on their knowledge of animal groups, focusing on common carnivores, herbivores and omnivores.
- to understand why humans have more than one type of tooth.
- children explore the digestive system and the route food takes through the body, starting with the teeth.

Common Misconceptions:

- Children may think that all animals have similar teeth.
- Children may have lost teeth and have gaps in their gums where their adult teeth are growing through. Ensure children are aware that most mammals have two sets of teeth in their lifetime.
- Children should be reminded that adult teeth are not replaced, and enamel does not regrow.
- When demonstrating the digestion model, it is difficult to separate the small and large intestine. Ensure children are aware that these are two different organs in the digestive system

Cross Curricular Links

English write persuasive pieces about dental hygiene

Art create 3D models of the digestive system

PE explore healthy eating habits and exercise

Possible Practical Activities:

Teeth , carnivores, herbivores and omnivores

Provide children with images of carnivores, herbivores and omnivores where their teeth are visible. Also provide cards of various foods that are eaten by each group. Children should sort cards to group each animal with the food it eats based on its tooth structure. • Ask children to research an animal to find out about its diet. Children should use this information to think about the animal's tooth structure and make predictions about what the animal's teeth might look like. They can then go back to their research to see the animal's actual tooth structure

Human Teeth

Provide children with a mouldable material such as salt dough. Lead them in creating a model of each type of tooth. Focus on the features of each tooth, for example, incisors are flat. During modelling, discuss the function of each type of tooth. Children can then add labels to a diagram of the types of teeth and describe their functions.

Layers of teeth

Children can model plaque build-up by experimenting with yeast and sugar. Fill two clear bowls with water and add some yeast. It is important to explain that yeast behaves similarly to bacteria. Add sugar to one of the bowls and allow children to observe as the yeast expands and froths as it reacts with the sugar. This can take up to 15 minutes. The frothing and the growth of the mixture show that the yeast is feeding on the sugar. This is similar to how the bacteria in the mouth can feed on sugar in food, which causes plaque to build up.

Plan—tooth decay experiment

Provide children with four hard-boiled eggs per small group. Explain to the children that a hard-boiled egg represents a tooth. Children should choose four different liquids to place the eggs in, such as water, cola, orange juice and vinegar. They measure the same volume of each liquid. Children should place their boiled eggs into the liquids and leave in an area of the classroom. They should predict what will happen to each egg over time.

The Digestive System

Provide children with images of organs in the digestive system. Children should arrange the cards in the correct order. They could then create a diagram or produce a story of the journey of food through the digestive system.

The Digestive System

Create a model of the digestive system. Use a banana as the food, a potato masher to represent the teeth, a zip-lock plastic bag for the stomach and tights to represent the intestines. Show children the journey of the banana as it travels through the digestive system. Mash the banana in a bowl and add water to represent saliva. Transfer this to a plastic bag that represents the stomach, adding vinegar as the stomach acid. Gently squeezing the food further represents digestion in the stomach. Cut a hole in the plastic bag and slide the tights over, acting as the intestines. Squeezing the tights allows liquid and small food parts to pass through, modelling how the small and large intestines remove nutrients and water leaving waste material behind.