

WHERE DOES ALL THAT FOOD GO?

INTRODUCTION

In this module children will build on knowledge of the human body that they developed in Key Stage 1 and also during the Amazing Bodies unit in Year 3. In this module the children will learn about the human digestive system. They will be introduced to the main body parts associated with the digestive system; the mouth, tongue, teeth, oesophagus, stomach, intestines, rectum and anus. They will learn that the role of the digestive system is to break down the food we eat so that the nutrients, energy and other requirements we derive from it can be used in the rest of the body. They will learn about how food can be broken down through mechanical and chemical processes. They will learn in more detail about the roles of the different types of teeth in breaking food down, and how to care for their teeth. They will also learn about milk teeth and permanent teeth. There are also opportunities for children to investigate questions around toothpastes.

This module also explores what animals eat and how this information can be used to build food chains. There are opportunities to explore how the teeth of animals are adapted to the type of food that they eat.

When working scientifically children will ask and answer questions about teeth, digestion and food chains by carrying out research using secondary sources. They will group and classify teeth by their function and relate this to diet. They will have opportunities to carry out comparative and fair tests on different types of toothpaste and to record and present data in a range of ways.

Key vocabulary:

mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus, digestive system, digestion, carbohydrate, fat, sugar, protein, roughage, dairy, fruit, vegetables, vitamins, minerals, balanced diet, healthy, mechanical process, chemical process, absorb, nutrients, water, saliva, chemicals, enzyme, teeth, canine, incisor, premolar, molar, jaw, cutting, tearing, grinding, dental hygiene, decay, dentist, brushing, toothpaste, floss, mouthwash, food, plants, animals, food chain, food web, producer, consumer, predator, prey, herbivore, omnivore, carnivore

FACT FILE:

Animals, including humans, cannot make their own food; they get nutrition from what they eat. We need to eat different types of food so that our bodies get sufficient nutrients for growth and repair and as a source of energy. These nutrients are absorbed by the body as it passes through the digestive system. The digestive system consists of the mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus.

Mouth

In the mouth food is broken down both mechanically by the teeth and chemically by the saliva.

Human teeth

Humans have two sets of teeth – milk teeth and permanent teeth. The role of the teeth is to break the food into smaller pieces so that it can be swallowed.

Types of teeth:

- Incisors – cutting and snipping



- Canines – ripping and tearing



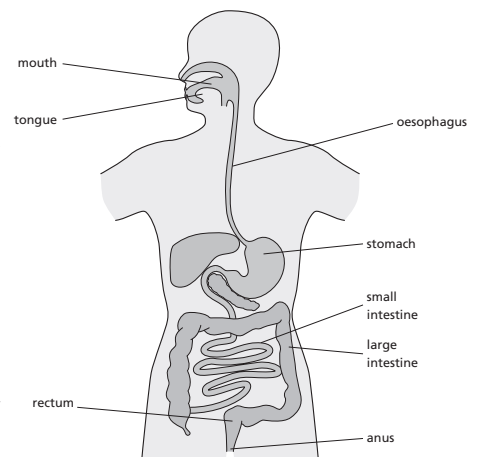
- Molars – crushing and grinding



Animal teeth

The size and number of the different types of teeth in animals vary from species to species.

- Herbivores eat only plants and have incisors and molars.
- Carnivores eat only meat and have incisors and canines.
- Omnivores eat plants and meat and have incisors, canines and molars.



Saliva

The saliva contains chemicals (enzymes) that break the food down chemically.

Tongue

The tongue is used to roll the food into a ball to help with swallowing.

Oesophagus

This is a tube that takes the food from the mouth to the stomach. This plays no function in the breakdown of food.

Stomach

In the stomach the food is churned around and broken down further mechanically. Gastric juices containing enzymes are also produced in the stomach wall, which help to break the food down further chemically.

Small intestine

Food continues to be broken down chemically in the small intestine, helped by juices produced by the liver and pancreas. Nutrients pass out of the digestive system in the small intestine to be transported to and used by the rest of the body.

NB: Food is digested in both the stomach and the small intestine: some foods are digested in the stomach (in which the juices tend to be acidic) while other foods are digested in the small intestines (where the juices tend to be alkaline).

Large intestine

As the remaining food passes through the large intestine water is removed to be used elsewhere in the body.

Rectum

The solid waste from food that is not required by the body is stored here until you go to the toilet.

Anus

The waste material passes out of the body through the anus when you go to the toilet.

Food chains

Most food chains start with plants, which are referred to as producers because they make food by photosynthesis using sunlight, carbon dioxide and water. Animals need to eat to gain their energy, so they are known as consumers. A herbivore eats plants only, a carnivore eats meat only, an omnivore eats both plants and meat. A carnivore is a predator as it eats other animals. Any animal that is eaten by another animal is known as prey. An animal may be both a predator and prey.

The arrows in a food chain show the flow of energy from one organism to another.

Common misconceptions:

- Children may use the word stomach, meaning their abdominal region (tummy) and not the organ inside.
- Children may have heard of food 'going down the wrong way'. This may lead them to think that there are two tubes (correct) but they may assume that the second tube is for drinks (not the air we breathe). This concept of food and drinks taking different paths through the body is often strengthened in children's minds because we remove solids and liquids from different parts of our bodies.
- Children often have little concept of how long the digestive tract is.
- Children often have difficulty with the scientific convention for recording food chains, using the arrow to represent 'eats' rather than 'is eaten by'. This may be because they associate the arrow with an action so they believe it points from the animal acting (eating) to the one being acted upon.
- Children may misunderstand the consequences of the removal of one species from a habitat, because they consider only an individual food chain rather than the more complex relationships of the food web. Although these inter-relationships are beyond the scope of this module, care must be taken not to oversimplify and as a result introduce misconceptions.

Big Cat book links

The Digestive System Harriet Blackford
978-0-00-746198-1
Band 8 Purple

We know we all need to eat, but why do we need to and where does it go?