

Objectives

By the end of this unit the children should:

- Understand that digestion is the process by which the body breaks down food in order to extract nutrients.
- Understand that nutrients provide the body with the energy needed for growth and to maintain healthy body systems.
- Be introduced to the key organs of the digestive system and their functions.
- Appreciate that undigested food passes through the large intestine and leaves the body as waste.

Key Teaching Points

The digestive system is the group of organs responsible for the digestion of food. They assist in the breakdown of food in order to extract the nutrients the body requires to grow, repair itself, and maintain health. Food passes through the mouth, oesophagus, stomach, small intestine and large intestine. Chemicals in saliva, the stomach and from other organs break the food into small particles, enabling nutrients and some other substances to be absorbed into the bloodstream. Undigested matter passes through the large intestine and out of the body.

Note: This unit assumes the children have already been taught the unit Balanced diet.

Starter Activity (10 minutes)

Resources: A metre stick.



Play the film **Big reveal.**



Ask the children what they know about the intestines and write their ideas on the whiteboard.

Tell the children that the intestines are an important part of the digestive system. **Ask** the children what they think the digestive system is. *The digestive system is the organs that work together to break down all the food you eat.*

Ask:

- 1) Why does food need to be broken down? *Because the body needs to extract the nutrients from it.*
- 2) What are the nutrients the body needs? *Carbohydrates for energy; fats for energy and warmth; proteins for growth and repair; vitamins and minerals for healthy body function.*

Explain to the children that the metre stick you are holding represents one-eighth of the length of the digestive system.

Point out the first 0.25m of the metre stick. Explain to the children that a tube connects the mouth to the stomach and its total length is around 0.25m.

Using the metre stick, measure out a length of 7.75m; this can be in a straight line, if there is room, or around the walls of the classroom. Tell the children that this represents the length of the intestines.

Starter Activity continued...

Ask: If this is the length of the rest of your intestines, how can they fit into the remaining space? *They need to be coiled up.*

Explain that approximately 6.25m of the length represents the small intestine and 1.5m represents the large intestine.

Ask: Why do you think the longer organ is called the “small” intestine and the shorter organ is called the “large” intestine? *This is due to its diameter rather than length.*

Main Activity (40 minutes)

Explain to the children that in this lesson they are going to consider how food passes through the whole digestive system.



Play the film **Food's incredible journey.**



Ask:

- 1) What is the first stage of digestion? *Food is chewed and saliva is added.*
- 2) Why is this important? *So that the food is soft and we are able to swallow it.*
- 3) Where does the food go once it's swallowed? *It travels down the oesophagus.* **Note:** Point out that the food does not simply fall through this tube – rather, muscles squeeze the food downwards.
- 4) What is this tube connected to? *The stomach.*
- 5) What happens in the stomach? *Chemicals – acid and enzymes – further break down the food.*
- 6) In which part of the digestive system are nutrients absorbed into the bloodstream? *The small intestine.*

Common misconception: Some children imagine that food travels around the body in the bloodstream. They may believe the oesophagus and windpipe are the same tube. Some may imagine that digestion only takes place, or begins, in the stomach. Children often think that the body can select which materials it ‘uses’ and expel those it does not need. The digestive system treats all materials entering it in the same way – those that can be absorbed will enter the bloodstream whether or not the body requires them. Ensure the children recognise that the digestive system breaks down food and extracts nutrients – it does not release energy from food.



Give each child a Digestive system activity sheet. Ask the children to arrange the labels and descriptions around the diagram.

Display the Digestive system diagram, provided in the classroom visuals, on the whiteboard so the children can check that they have the correct answers.



Play the film **The intestines.**



Ask:

- 1) What is removed from undigested food in the large intestine? *Water.*
- 2) What happens to undigested materials? *They are expelled from the body as faeces.*

Further Questions

- Explain to the children that the body is not able to select which chemicals are absorbed into the blood; harmful ones can pass through as well as good ones. Ask the children to discuss with a partner what harmful substances could be taken into the blood. *Drugs, alcohol, chemicals from cigarettes.*

Review (10 minutes)

Use one or all of the following films to conclude the lesson:



Play the film **Odd one out.**



(You can pause at **00:30** and ask the children to share their ideas with a partner.)

Ask: Can you name the other organs in the digestive system? Oesophagus, liver, pancreas.



Play the film **True or false.**



(You can pause at **00:20** and ask the children to vote.)



Play the film **Did you know?**



Ask the children if they would like to eat partially digested and regurgitated food from their parents!