

## The Human Digestive System

Could Stone Age people digest their food in the same way that we do today?

### Learning Overview

**WHAT:** Describe the simple functions of the basic parts of the digestive system in humans (Year 4 Animals Including Humans).

**HOW:** By matching everyday objects to stages of the human digestive system based upon the job they do. By using secondary sources of information to compare the digestive systems of the Stone Age and now.

**OUTCOME:** Pupils will learn to identify the main parts of the digestive system in humans and their simple functions. They will make comparisons between the human digestive system today and 4,500 years ago.

### Resources



Activity Sheet 5



Packaging from a range of lactose-free food and drink products



Simple image or poster of the human digestive system

### Tray containing the following objects:



Small plastic bowl and knife



25cm length of foam pipe



Sealable food bag containing a small amount of lemon juice



Pair of sheer tights



Paper cup with small hole cut into the base

### Vocabulary

Mouth, teeth, tongue, saliva, oesophagus, stomach, acid, small intestine, large intestine, blood, rectum, anus, nutrients, lactose-intolerant.

### Setting the Scene: What is the human digestive system?

1. Explain to pupils that the human digestive system is a remarkable thing that takes the food and drink you put in your mouth on an incredible journey. At this point you could show pupils a simple image or poster of the human digestive system so that they can begin to visualise the journey.

2. As a class, examine the objects in the tray provided. Explain that each object represents something happening at a different stage of the digestive process in humans.

3. Pupils should discuss the following questions with a partner and then as a whole class:

- What happens to your food when you eat it?
- Do you know the name of any body parts in the human digestive system?
- What do you think the objects in the tray might represent?

### What do scientists tell us?

4. Explain to children that scientists tell us that food goes into your mouth where it is chewed by teeth, mashed by the tongue and made soft by mixing with saliva. Once you swallow your food, digestion begins as food is pushed down the oesophagus (food pipe) to your stomach. Here, food mixes with juices, called acids, to dissolve the food and break it down. The food leaves the stomach and travels through the small intestine, which sends nutrients and water from your food into the blood. The remaining undigested food travels through the large intestine and then is stored in the rectum as solid waste until, about a day later, it comes out of the anus and into the toilet to be flushed away.

5. Ask pupils to label the different parts of the human digestive system using Activity Sheet 5.

6. They should now revisit the objects from the tray and match each one with a stage in the system. Explain to pupils that there are no right or wrong answers as long as they can justify their choices. Possibilities might include:

- The bowl could represent the mouth and the knife could represent teeth chopping and cutting.
- The oesophagus is a flexible food pipe and could be represented using a foam tube.
- The stomach could be represented using a sealable food bag into which lemon juice can be added to represent the stomach acid. The small and large intestines could be represented using a pair of sheer tights.
- The rectum could be represented using a paper cup to store the waste and the hole in the base could represent the anus.

### Exploring the Evidence: Was digestion the same in the Stone Age as it is today?

7. Share with pupils the evidence that scientists studying DNA from the remains of people found out that people in Britain during this period of the Stone Age were lactose-intolerant. This means that they were unable to absorb a natural sugar found in milk, called lactose. It is believed that Neolithic people had problems digesting raw milk and suffered symptoms such as stomach pain, sickness or diarrhoea! Today, around two thirds of the world's adult population cannot digest milk. Why do children think that it is more difficult for many adults to digest milk?

8. Explain that scientists were puzzled when they found traces of dairy products in many of the Grooved Ware pots discovered at Durrington Walls. This led them to suggest that people used milk to make food such as yoghurt and cheese, which contain less lactose, so that they could digest it more easily. It is important to note that this is the first period in which people would have had such access to milk.

9. Ask pupils to summarise what they have learnt about digestion during the Neolithic times by completing the final section of Activity Sheet 5.

And finally...

10. It would be interesting for pupils to examine the packaging from a range of lactose-free food and drink products available to us and think about how scientists today can provide us with much more information about food, nutrition and diet.



### Fantastic Fact

It is estimated that less than 15% of people living in the UK today are lactose intolerant and suffer the same problems as Neolithic people did when eating and drinking products containing cow's milk! Following their Stone Age ancestors, many of these people are able to digest milk if it is made into yoghurt and cheese.



Durrington settlement summer | English Heritage - Credit: Drawing by Peter Lorimer