

# Digestive run

## Location

Ground floor, All About Us exhibition

## In a nutshell

What happens to your food between your mouth and the toilet? The balls show how your meals are broken down and directed just where they're needed.



## What to do

Students select an item of food to feed the skeleton. Coloured balls representing the nutritional content of the selected food make their way through the skeleton's body to where they're needed. Students can then select either 'wee' or 'poo' to remove the waste.

## Time Required

KS3 & KS4 3-4 minutes per student.

## What's happening?

Your digestive system can be thought of as a large conveyor belt passing through the body. The food is processed in different ways and useful products are moved into the body at each stage leaving a pile of waste at the end. It can be split into a number of stages: ingestion, mechanical breakdown, digestion, absorption, excretion. During ingestion food is placed into the mouth, swallowed and moved into the stomach via the oesophagus. Food is mechanically broken down into smaller pieces by chewing and the churning motion of the stomach. Digestion, or the chemical breakdown of food, begins in the stomach where food spends up to four hours with the mixture of enzymes in our stomach acid. The resulting small, simple food molecules are absorbed across the small intestine wall into the blood stream. Amino acids and simple sugars are sent to the liver. Waste is transported to the kidneys to become wee (urine). Fats are sent through the lymphatic system. The large intestine will absorb water and manufacture certain vitamins. Then undigested waste is ejected from the body

### Curriculum links

Curriculum links	
<b>KS3</b>	<p><b>Science - Nutrition and digestion</b></p> <ul style="list-style-type: none"> <li>- content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed</li> <li>- the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases</li> </ul> <p><b>Design &amp; Technology</b></p> <ul style="list-style-type: none"> <li>- understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]</li> <li>- understand how more advanced mechanical systems used in their products enable changes in movement and force</li> </ul> <p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>- understand and apply the principles of nutrition and health</li> </ul>
<b>KS4</b>	<p><b>Science - Transport systems in multicellular organisms</b></p> <ul style="list-style-type: none"> <li>- describe some of the substances transported into and out of a range of organisms in terms of the requirements of those organisms, to include oxygen, carbon dioxide, water, dissolved food molecules, mineral ions and urea</li> </ul> <p><b>Design and technology</b></p> <ul style="list-style-type: none"> <li>- how electronic systems provide functionality to products and processes, including sensors and control devices to respond to a variety of inputs, and devices to produce a range of outputs</li> <li>- the functions of mechanical devices, to produce different sorts of movement, changing the magnitude and direction of forces</li> </ul> <p><b>Food preparation and nutrition</b></p> <ul style="list-style-type: none"> <li>- develop knowledge and understanding of the functional properties and chemical processes as well as the nutritional content of food and drinks</li> </ul>

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> <li>• Choose health (KS3 lower)</li> </ul>	<ul style="list-style-type: none"> <li>• How my body works (KS3)</li> </ul>		<ul style="list-style-type: none"> <li>• Food energy</li> </ul>

