

## KNOWLEDGE ORGANISER

**BIG IDEA:** ORGANISMS

**TOPIC:** Digestion

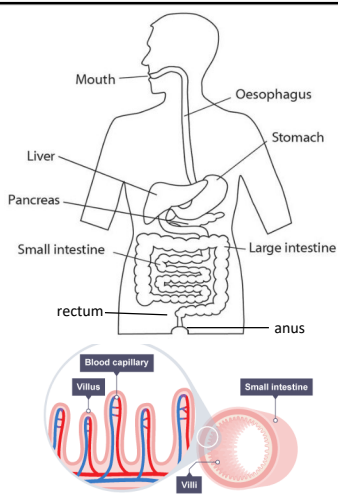
Key Word	Definition
<b>enzymes</b>	Substances that speed up the chemical reactions of digestion by breaking down large food molecules into smaller ones.
<b>carbohydrates</b>	The body's main source of energy. There are two types: simple (sugars) and complex (starch). Sources are bread, pasta, potatoes.
<b>lipids</b>	A source of energy (ie fats and oils). Sources are butter, milk, eggs, nuts.
<b>protein</b>	Nutrient your body uses to build new tissue for growth and repair. Sources are meat, fish, eggs, dairy products, beans, nuts and seeds.
<b>stomach</b>	A muscular sac where food is mixed with digestive juices and acid to start the digestion of protein and kill microorganisms.
<b>small intestine</b>	Where digestion is completed and nutrients are absorbed by the blood.
<b>large intestine</b>	Water is reabsorbed into body, leaving solid undigested waste called faeces.
<b>malnourishment</b>	The lack of proper nutrition.

### Parts of the digestive system

The digestive system is a group of organs that work together to break down food.

- Mouth: food is chewed into smaller chunks and mixed with saliva.
- Gullet/oesophagus: food passes down this tube.
- Stomach: food is mixed with digestive juices and acid.
- Small intestine: digestive juices from liver and pancreas are added and digestion is completed. Small molecules pass through the small intestine walls (villi) into the blood.
- Large intestine: water is reabsorbed into body, leaving solid undigested waste called faeces.
- Rectum: faeces stored here until they leave the body.
- Anus: a muscular ring through which faeces pass out of the body.

Villi are tiny projections in the small intestine wall that increase the area for absorption.

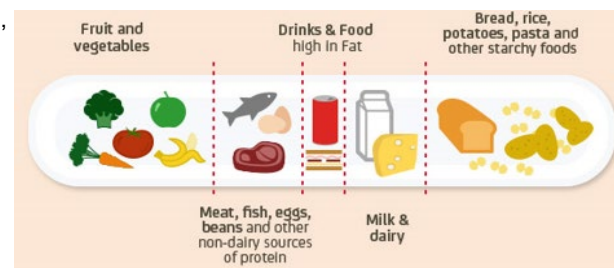


The body needs a **balanced diet** with lipids, proteins, vitamins, minerals, dietary fibre and water, for its cells' energy, growth and maintenance.

Vitamins and minerals are needed in small amounts to keep the body healthy:

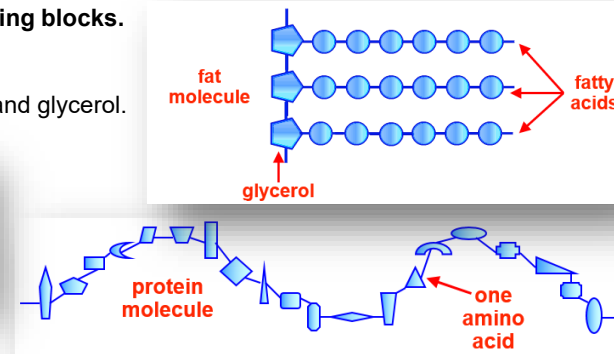
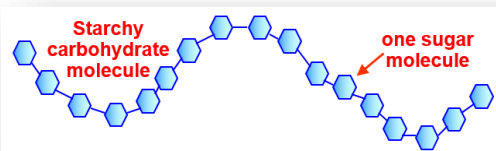
- Iron is a mineral important for red blood cells.
- Calcium is a mineral needed for strong teeth and bones.

If you have an unbalanced diet you might become malnourished and suffer health problems such as obesity, anorexia or a deficiency disease. Some people also follow special diets, such as vegetarianism.



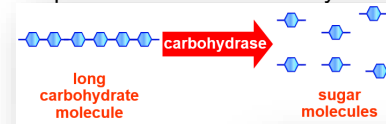
### Carbohydrates proteins and fats and their building blocks.

- Starchy carbohydrates are made of sugars
- Proteins are made from amino acids
- Lipids (fats and oils) are made from fatty acids and glycerol.



**Digestive enzymes** are substances that speed up the chemical reactions of digestion by breaking down large food molecules into smaller ones.

- carbohydrase – breaks carbohydrate into smaller sugars
- protease – breaks protein into amino acids
- lipase – breaks fat into fatty acids and glycerol



Good bacteria in our guts are important for our digestive system and body. They help break down food and make vitamins that are absorbed into our bodies.



## Y8 topic: Digestion

### I have already learned:

#### In KS2:

- The impact of diet, exercise, drugs and lifestyle on the way bodies function
- The different types of teeth in humans and their simple functions
- That animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- The simple functions of the basic parts of the digestive system in humans and the ways in which nutrients and water are transported within animals, including humans

#### In KS3

- Y7 Movement: link to muscles involved in digestion
- Y7 Cells: link to cellular organisation (digestive system as an example of an organ system)

### This topic links to:

#### KS4:

- B2a: The human digestive system

### It is important to study about digestion because...

you can make better choices about the food you eat so you can have a balanced diet and not suffer from malnutrition. Studying digestion can help you to understand your own health and how your body works.

### Possible careers involving digestion are...

- Nutritionist
- Dietician
- Doctor
- Food scientist
- Chef
- Food marketing