

SUBJECT:

UNIT: Year 8: Digestion

While you were away.

Lesson one: Nutrients

1. What are the 7 main nutrients?
2. Why do you need carbohydrates?

Lesson Two: Food tests

1. What is used to test for starch?
2. What colour indicates a positive test for sugar?

Lesson three: Unhealthy diet

1. What can an unhealthy diet lead to?
2. Give an example of a deficiency

Lesson Four: Digestive system

1. What is an enzyme?
2. What organs are part of the digestive system?

Lesson Five: Bacteria and enzymes in digestion

1. What enzyme breaks down protein?
2. What does amalyse break down?

SUBJECT: Science

UNIT: Y8 Digestion



Key Vocabulary

Deficiency

When a human being does not receive enough of a nutrient

Enzyme

Biological catalyst that speeds up the breakdown of food molecules

Absorbed

When a substance is taken in

Digestion and Breathing

Digestion is the breaking down of large insoluble substances into smaller smaller substances.

Nutrients and Food Tests

There are 7 main nutrients: carbohydrates, protein, fats, vitamins, minerals, water, and fibre.

Testing:

Protein: biuret test, positive result: turns purple

Carbohydrates (starch): iodine, positive result; colour change from orange to blue-black.

Carbohydrates (sugar): benedict's, positive result: colour change from blue to orange/red

Fats: ethanol, positive result: cloudy white

Deficiencies

An unhealthy diet can lead to malnutrition or obesity. Examples of malnutrition include: goitres, kwashiorkor, rickets, and scurvy.

Enzymes

Enzymes are biological catalysts which speed up the break down of food in the body so it can be absorbed in the small intestine. There are specific enzymes for each nutrient. Protease breaks down proteins. Amylase breaks down starch. Carbohydrase breaks down carbohydrates. Lipase breaks down lipids (fats).

Ambitious Vocabulary

diffusion, deficiencies, enzymes

Digestive System

Food enters the body through the mouth and is chewed and mixed with digestive enzymes. It travels through the oesophagus to the stomach and mixes with more enzymes and stomach acid. It then travels through the small intestine where nutrients are absorbed and then the large intestine where water is absorbed. The excrement is stored in the rectum and excreted out the anus. Other organs involved in digestion are the pancreas where most enzymes are produced and the liver which produces bile to break down fats.

Diffusion

When a substance moves from an area of high concentration to low concentration until the particles are evenly spread.

Part	Function
Mouth	Digestion of food starts in the mouth. Teeth break down the food and mix it with the enzymes in saliva.
Oesophagus	This is a thin tube that connects the mouth to the stomach.
Liver	This releases a chemical called bile into the intestines. Bile breaks down lipids in the food
Stomach	This is a muscular bag which mixes food and drink with acid
Pancreas	This releases enzymes into the intestines which break down carbohydrates, proteins and lipids in food
Small Intestine	This is where carbohydrates, proteins and lipids digest. The nutrients produced are then absorbed into the blood
Large intestine	This is where water is absorbed into the blood