



Box 1: Keywords

Word	Definition
Benedict's solution	A blue liquid that turns orange-red when heated with a sugar solution.
Bile	Substance that breaks fat into small droplets.
Biuret solution	A pale blue solution that turns purple when added to protein.
Carbohydrase	Enzyme that breaks down carbohydrates into sugar molecules.
Catalyst	Substance that speeds up a reaction without being used up.
Enzyme	Special protein that can break large molecules into small molecules.
Iodine	An orange-brown solution that turns blue-black when added to starch.
Lipase	Enzyme that breaks down lipids into fatty acids and glycerol.
Protease	Enzyme that breaks down proteins into amino acids.
Starch	A type of carbohydrate found in plants, especially grains and potatoes.
Stimulant	A drug that speeds up the body's reactions by speeding up the nervous system.
Villi	Tiny projections in the small intestine wall that increase the area of absorption.

Box 2: Key skills

Carry out the food tests for **starch**, lipids, sugar, and protein and make scientific predictions. Describe the role of enzymes in digestion. How to calculate percentages.

Box 3: Nutrients

Your body needs the right amount of nutrients to survive and stay healthy. If a person doesn't have the correct nutrients it can lead to starvation, obesity or vitamin and mineral deficiencies. The amount of energy you need depends on your age, body size and how active you are. The main types of nutrients are:

1. Carbohydrates- provide energy.
2. Lipids (fats and oils)- provide energy.
3. Proteins- used for growth and repair.
4. Vitamins- keep you healthy.
5. Minerals- keep you healthy.
6. Water- Needed in all cells and body fluids.

You also need fibre to keep the food moving through the gut. To be healthy you need a balanced diet.

Box 4: Food tests

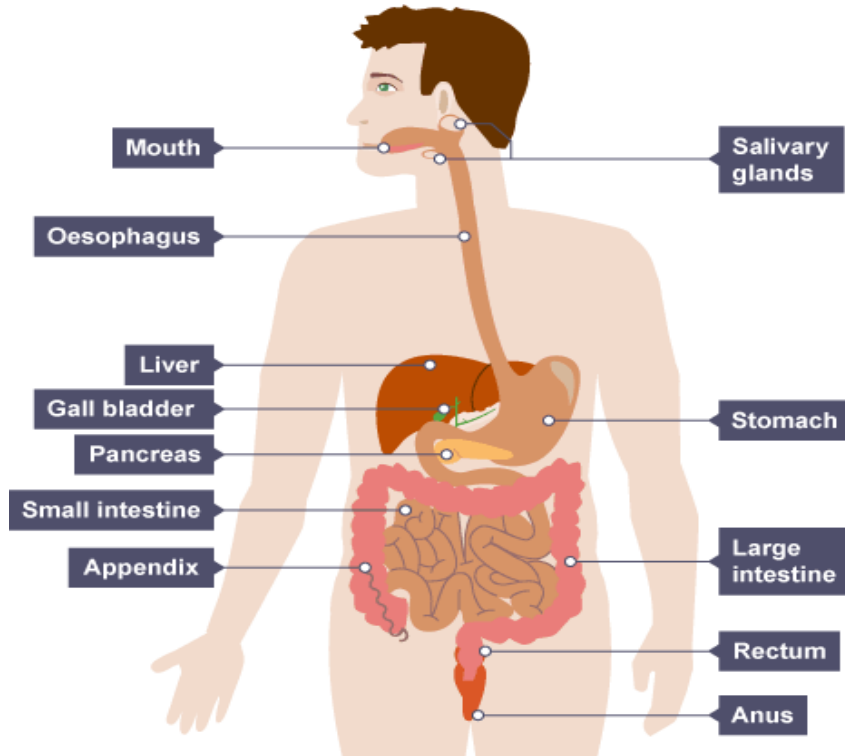
There is a different chemical test for each type of nutrient.

Solution	What it tests for	If it is positive
Iodine	Starch	Turns blue-black
Benedict's solution	Glucose	Turns red-orange
Biuret's solution	Protein	Purple
Ethanol and water	Lipids	Goes cloudy



Box 5: The digestive system

Digestion is the break down of large, insoluble food molecules into small soluble molecules. These small molecules absorb into your blood for your body to use. Structures in the digestive system:



Box 6: Enzymes in digestion

Enzymes are special proteins that break down large nutrient molecules into smaller molecules. They are known as biological **catalysts**. The three main types of digestive **enzymes** are **carbohydrase**, **protease** and **lipase**. **Bile** is a substance produced in the liver which breaks down **lipase**. Bacteria in your large intestine also aids digestion by making important vitamins such as vitamin K.

Box 7: Drugs, alcohol and smoking

Drugs are chemical substances that affect the way your body works. They can be medicinal or recreational. Medicinal drugs are used in medicine. Recreational drugs are taken for enjoyment, to help people relax or to help them stay awake. Some are illegal e.g. heroin, cocaine, cannabis and ecstasy. Some are legal e.g. alcohol, tobacco and caffeine.

Alcohol is a depressant as it slows down your body's reactions. Drinking large amount of alcohol over time can cause stomach ulcers, heart disease, brain and liver damage. To lower the risk the government recommends that adults do not drink more than 14 units of alcohol a week.

Cigarettes contain tobacco which contain over 4000 chemicals including tar, nicotine and carbon monoxide. Nicotine is addictive and is a **stimulant**. Smoking can cause respiratory infections, heart disease and emphysema.

Box 8: Pathway

Previous knowledge: KS2 Main parts of plants and animals.

Future links: KS4 Health and lifestyle.

Careers: Dietician, chef, doctor, personal trainer, physiotherapist, Cardiologist, drug counsellor, pharmacist.

Box 9: Cross curricular links