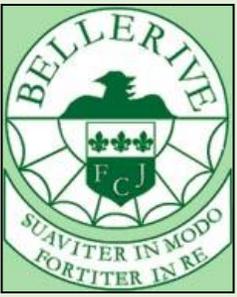


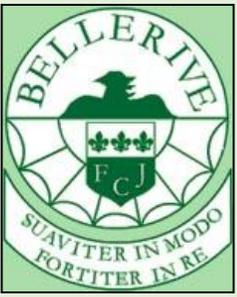
Lesson 1 – Nutrition.



Key points to learn:

- 1) There are **7** main food groups.
- 2) Proteins are for **growth** and **repair**.
- 3) Carbohydrates are for **energy**.
- 4) Fats are for **energy** and **insulation**.
- 5) Vitamins and minerals to stay **healthy**.
- 6) Water for **hydration**.
- 7) Fibre to keep the **intestines** healthy and prevent constipation.
- 8) Healthy people need a **balanced diet**.

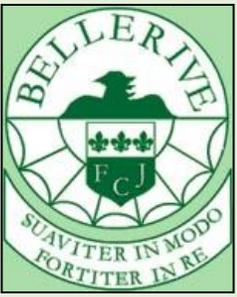
Lesson 2 – Testing foods for carbohydrates



Key points to learn:

- 1) Starch and sugars are both carbohydrates.
- 2) Iodine solution will turn **blue/black** when starch is present.
- 3) Benedict's solution when heated will turn **orange/red** when sugars are present.
- 4) Care must be taken when completing food tests and safety glasses must be worn.

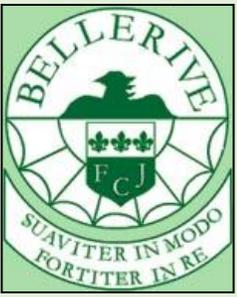
Lesson 3 – Testing foods for protein and fats.



Key points to learn:

- 1) Biuret solution will turn **purple/lilac** when protein is present.
- 2) Fats/oils will leave a **greasy mark** on brown paper.
- 3) Care must be taken when completing food tests and safety glasses must be worn.

Lesson 4 – Energy in food.

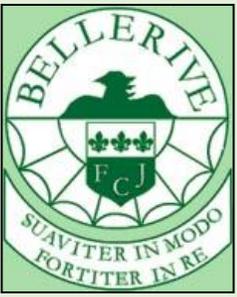


Key points to learn:

- 1) Cells require energy to stay alive.
- 2) Food provides the energy for cellular processes.
- 3) The energy supplied by food can be measured in a laboratory.
- 4) A **calorimeter** is used to determine the energy in food.

Ref: CGP Biology page 23.

Lesson 5 – Daily energy requirements.

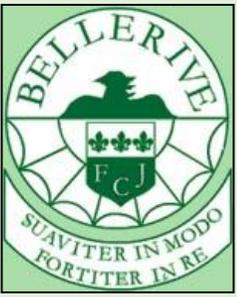


Key points to learn:

- 1) People have different **daily energy** requirements.
- 2) The Basic Energy Requirement (**BER** or BMR) is the energy needed for basic bodily processes.
- 3) Heavier people require more energy as they have more cells.
- 4) Growing and more active people need more energy.
- 5) Body Mass Index (**BMI**) is a way of determining whether you are overweight or underweight.

Ref: CGP Biology page 23 & 24.

Lesson 6 – Poor diets

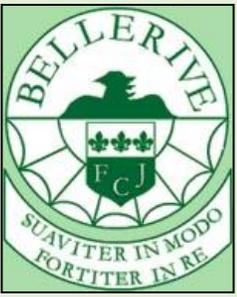


Key points to learn:

- 1) **Malnutrition** can be caused by too much or too little of a food nutrient.
- 2) Starvation and anorexia are caused by too little food.
- 3) Obesity is caused by too much food.
- 4) Lack of minerals can cause **deficiency diseases** such as anaemia.
- 5) Lack of vitamins can cause deficiency diseases such as scurvy, rickets and beri-beri.
- 6) Many people in the UK are ill due to poor diets.

Ref: CGP Biology page 20-24.

Lesson 7 – The Digestive System.

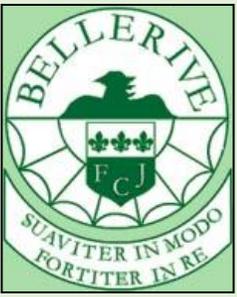


Key points to learn:

- 1) The digestive system is made up of 8 important **organs**.
- 2) The mouth, oesophagus (gullet), stomach, liver, pancreas, small intestine, large intestine and the rectum make up the digestive system.
- 3) These organs are made from different **tissues**.
- 4) Digestion is about **breaking down** food.

Ref: CGP Biology page 26 & 27.

Lesson 8 – Process of digestion.

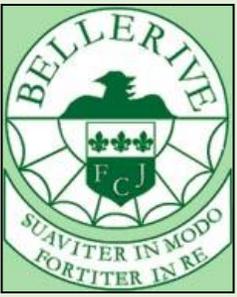


Key points to learn:

- 1) Digestion turns large insoluble food molecules into small soluble molecules.
- 2) Food is broken down **mechanically** and **chemically**.
- 3) **Enzymes** are chemicals which speed up the chemical breakdown of food.
- 4) Enzymes include: carbohydrases, lipases and proteases.
- 5) The liver makes **bile** which helps in the digestion of fat/oils.

Ref: CGP Biology page 26 & 27.

Lesson 9 – Enzymes and digestion.

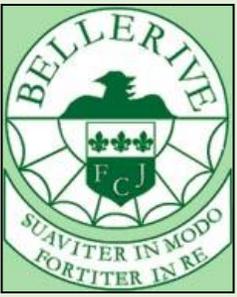


Key points to learn:

- 1) Protease enzymes breakdown proteins.
- 2) Carbohydrase enzymes breakdown carbohydrates.
- 3) Amylase is an enzyme which breaks down starch.
- 4) Lipase enzymes breakdown lipids (fats/oils).
- 5) Enzymes work best at body temperature (**37°C**).

Ref: CGP Biology page 26 & 27.

Lesson 10 – The model gut.

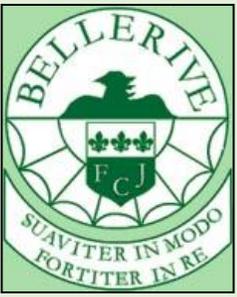


Key points to learn:

- 1) Visking tubing can be used to model the human small intestine.
- 2) The enzyme **amylase** breaks down starch into sugar.
- 3) Sugar is a **small soluble** food molecule.
- 4) Only small soluble food molecules can pass into the **blood**.

Ref: CGP Biology page 29.

Lesson 11 – Absorption of food.

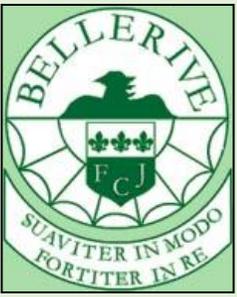


Key points to learn:

- 1) The small intestine is where food molecules are absorbed into the blood.
- 2) The small intestine is very long and contains **villi** giving it a **large surface area**.
- 3) The small intestine has very **thin** walls.
- 4) The small intestine also has a very good **blood** supply.
- 5) **Bacteria** living in the intestines are very important for health.

Ref: CGP Biology page 30.

Lesson 12 – Aerobic Respiration.

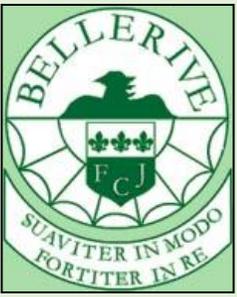


Key points to learn:

- 1) Respiration is a **chemical reaction** where **energy** is released from food.
- 2) All living things respire.
- 3) Aerobic respiration requires glucose and **oxygen** and produces carbon dioxide and water.
- 4) The energy released is used to keep the cells working.

Ref: CGP Biology page 17.

Lesson 13 – Anaerobic Respiration.



Key points to learn:

- 1) Anaerobic respiration does **not** need oxygen.
- 2) It releases **less energy** than aerobic respiration.
- 3) Anaerobic respiration in animals produces **lactic acid**.
- 4) Anaerobic respiration in yeast produces **ethanol** and **carbon dioxide**.

Ref: CGP Biology page 17 & 18.