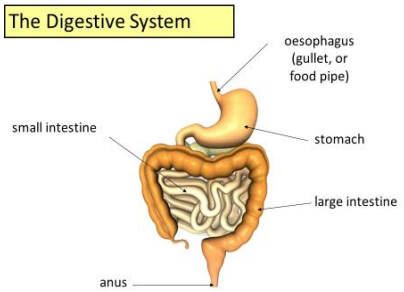
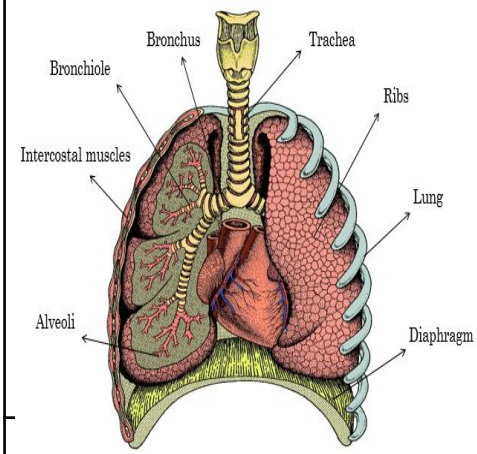
B

Body Systems

Y8

Rationale: This topic will give us a better idea of how some of the parts of the human body works to allow us to digest food and how and why we breathe in and out. This will then be linked to how we use the oxygen we breathe in and the glucose from food to release energy.

Diagrams	Keywords and Definitions, Key Concepts
1 	**Oesophagus**: joins the mouth and the stomach. **Stomach:** contains acid and enzymes to break down food. **Small intestine:** releases enzymes, breaking down carbohydrates, proteins and fats into smaller molecules. **Large intestine:** where the water is absorbed back into the body. The undigested food molecules that remain form our **faeces**. The faeces is passed into the **rectum** and is excreted from the body through the **anus**.
2: The respiratory system 	**Alveoli:** Tiny air sacs in the lungs, where gas is exchanged during breathing. **Intercostal muscles:** Sets of muscles between the ribs which raise and lower the rib cage. **Bronchiole:** The many small, branching tubules into which the bronchi subdivide. **Bronchi:** The plural of 'bronchus'. The bronchi are the two major air tubes in the lungs. **Trachea:** The windpipe, the tube that leads from the mouth towards the lungs. **Lungs**: The organs responsible for gas exchange in mammals, birds, reptiles and amphibians. **Diaphragm** : A large sheet of muscle that separates the lungs from the abdominal cavity.
3: Food Tests **Starch Test** Add 3 drops of brown IODINE to the food If starch is present it changes to **BLACK** **Fat Test** Rub or add 3 drops of the food to a piece of FILTER PAPER If fat is present it leaves a greasy mark when you hold it up to the light **Protein Test** Add 2cm^3 colourless sodium hydroxide to the food Then add 3 drops of blue BIURET chemical If protein is present it will change to **LILAC** **Sugar or Glucose Test** Add 2cm^3 blue BENEDICTS solution to the food Heat gently in a water bath for 5 minutes If sugar/glucose is present it changes to a **BRICK RED** solid (or precipitate)	
4 Respiration Word equation for aerobic respiration: glucose + oxygen → carbon dioxide + water (+ energy) Word equation for anaerobic respiration: glucose → lactic acid (+ energy)	Respiration is a chemical reaction between glucose and, if available, oxygen that releases energy. It happens in all living cells, inside the **mitochondria**. **Energy** is needed so we can do things like: Contract our muscles. Produce heat to keep us at our body temperature of 37°C. Build large molecules from smaller molecules. **Aerobic respiration** occurs when there is **enough oxygen**. **Anaerobic respiration** occurs in the **absence of oxygen**. Anaerobic respiration releases less energy than aerobic respiration.