

Photosynthesis

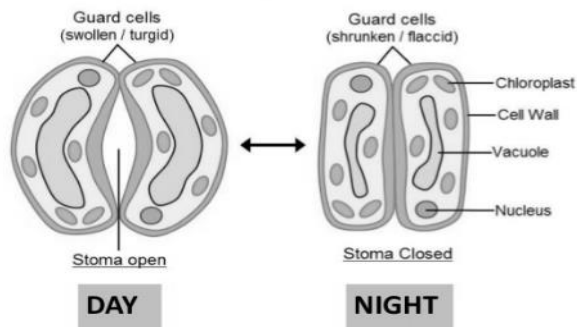
- It's a chemical process plants & algae use to make their own food (**glucose**)
- Photosynthesis takes place in the **CHLOROPLASTS** of plant cells.
- Light energy is absorbed by a green pigment called **CHLOROPHYLL**.

Light Energy



- A leaf is broad and flat to capture lots of sunlight.
- Veins carry water to the leaf and take food from the leaf to the rest of the plant.
- Certain plant cells contain chloroplasts filled with chlorophyll.
- Small holes called stomata in the underside of a leaf allow gases in and out.

When are stomata open and when are they closed?



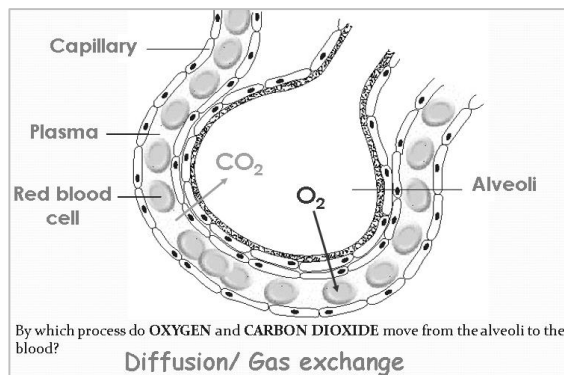
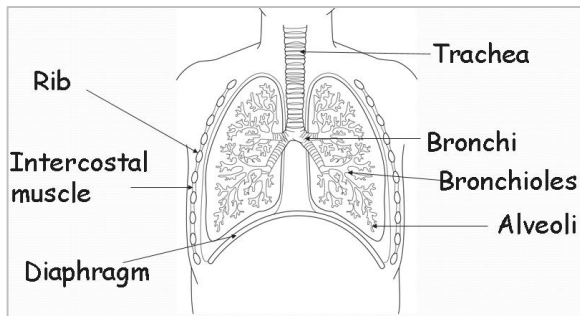
Changes to the body during exercise:

- Heart rate increases
- Stroke volume increases
- Breathing rate increases
- Deeper breaths
- Sweat
- Blood vessels dilate

Why does heart rate increase during exercise:

- More blood
- More glucose & oxygen to muscles
- More respiration = more energy
- More muscle contraction
- More CO₂ removed
- More lactic acid oxidised

Y8 Bio T1- Bioenergetics



Aerobic respiration is the process of releasing energy. Aerobic respiration happens in the **mitochondria**. We need it for:

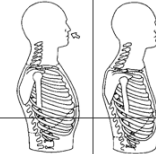
- ✓ Muscle contraction (moving)
- ✓ Making molecules (growth)
- ✓ Maintain a warm body temperature



During exercise, if INSUFFICIENT OXYGEN is reaching the muscles they use anaerobic respiration to obtain energy.

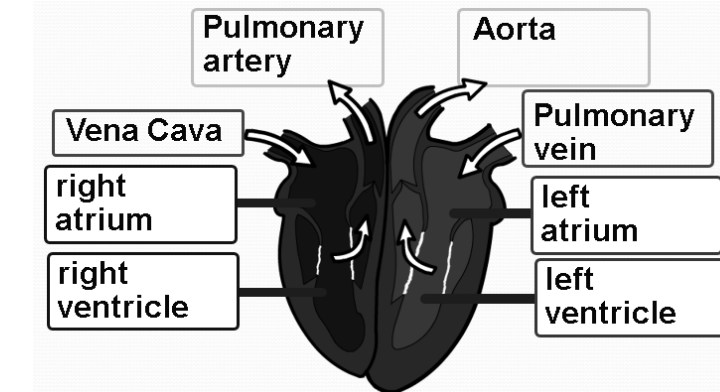
Anaerobic respiration is the INCOMPLETE BREAKDOWN OF GLUCOSE.

Inhalation



Exhalation

Ribs move up and out	How do the ribs move?	Ribs move down and in
Diaphragm moves down	How does the diaphragm move?	Diaphragm moves up
Pressure decreases in the chest	What happens to the pressure in the chest?	Pressure increases in the chest
Volume increases	What happens to the volume in the chest?	Volume decreases



red blood cell	carries oxygen around the body
white blood cell	engulfs invading pathogens
platelet	plays an important role in blood clotting
plasma	fluid which carries other blood components

artery	vein	capillary
carries blood away from heart	carries blood towards heart	carries blood to and from cells
has thick and elastic walls	contains valves	has thin, permeable walls
carries blood at high pressure	has a large lumen	