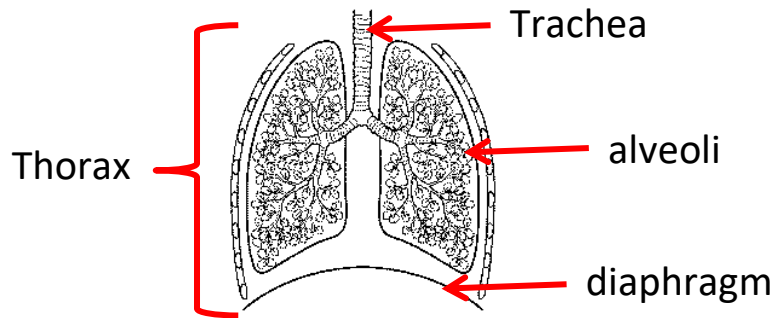


## 1. Key Words

1	Diaphragm	Flat muscle underneath the lungs that contracts and relaxes to cause breathing
2	Trachea	Tube containing rings of cartilage that allows air to move in and out of the lungs
3	Thorax	Air tight chest cavity containing the respiratory system and the heart.
4	Alveoli	Small blind ending sacs where gases are exchanged between the air and the blood



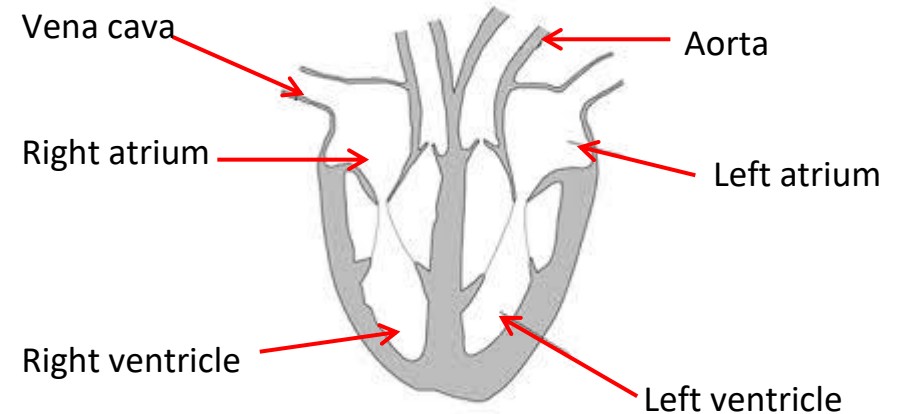
## 2. Smoking

**Cigarettes** are very harmful and contain a range of harmful substances

Substance	Effect
<b>Tar</b>	Irritates and narrows airways. Contains chemicals that can cause cancer
<b>Nicotine</b>	An addictive drug that speeds up the heart and narrows blood vessels
<b>Carbon monoxide</b>	A poisonous gas that stops blood from carrying oxygen

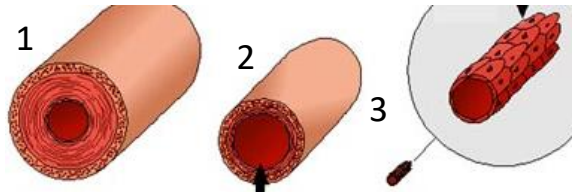
## 3. Circulatory system

	Key Word	
1	Vena cava	Vein that brings deoxygenated blood back to the heart from the body
2	Right atrium	Pumps blood into the ventricle and where the pacemaker cells are located
3	Right ventricle	Pumps blood out of the heart to the lungs
4	Left atrium	Pumps blood to the left atrium
5	Left ventricle	Pumps blood out of the heart to the body. Has a large muscle wall to pump blood at a high pressure
6	Aorta	Artery that carries blood away from the heart to the body



## 4. Blood composition and Blood Vessels

	Blood Vessel	Structural Adaptations
1	Artery	Small lumen and thick muscular walls to withstand and maintain a high blood pressure
2	Vein	Large lumen to increase the volume of blood in the blood vessel. Valves to prevent the back flow of blood
3	Capillary	Thin walls that are only 1 cell thick to decrease the diffusion pathway and speed up exchange of substances



Component	Function
Plasma	Carries dissolved substances around the body including CO <sub>2</sub> , urea, glucose, minerals, hormones and amino acids
Red blood cell	Carry oxygen from the lungs to the body cells
White blood cells	Internal defence against infection
Platelets	Causes the blood to clot around a wound

## 5. Key Words

Key Word	Definition
Aerobic respiration	Release of energy from the break-down of glucose using oxygen
Anaerobic respiration	Release of energy from the incomplete breakdown of glucose in the absence of oxygen
Oxygen Debt	Volume of oxygen required to break-down lactic acid in the muscles after respiration
Muscle fatigue	Where muscles can no longer contract and relax to cause movement, caused by the build-up of lactic acid

## 6. Word equations

### Aerobic respiration

Glucose + Oxygen  $\rightarrow$  Carbon dioxide + Water (+energy)

### Anaerobic respiration

Glucose  $\rightarrow$  Lactic acid (+energy)

## 7. Effects of exercise on the body

Effect	Reason
Heart beats faster	Pumps oxygenated blood around the body faster
Breathe faster and deeper	Increases the amount of oxygen absorbed into the blood
Red and sweaty skin	To cool the body down