

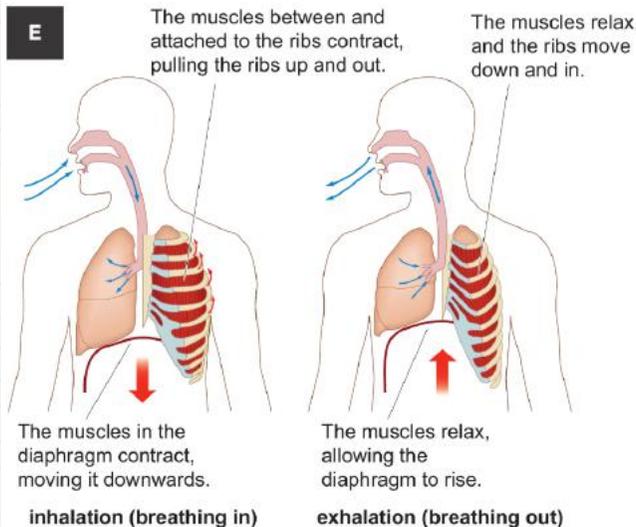
**Section A: Key Vocabulary**

Keyword	Definition
Breathing	The movement of muscles that make the lungs expand and contract.
Breathing rate	The number of times you inhale and exhale in one minute.
Carbon dioxide	A waste gas produced by respiration
Contract	To get smaller. When a muscle contracts it uses energy to get shorter and fatter.
Diaphragm	Organ containing a lot of muscle tissue, which contracts and moves downwards to increase the volume of the lungs when inhaling.
Excretion	Getting rid of waste. All organisms excrete.
Exhalation	Breathing out.
Gas exchange	When one gas is swapped for another. In the lungs, oxygen leaves the air and goes into the blood. At the same time, carbon dioxide leaves the blood and goes into the air in the lungs.
Inhalation	Breathing in.
Oxygen	A gas that makes up about 21% of the air.
Respiration	A process in which energy is released from substances so it can be used by an organism. All organisms respire. There are, however, different forms of respiration.
Artery	A blood vessel that carries blood away from the heart.
Blood vessel	A tube that carries blood in the body
Bone marrow	Tissue inside bones in which blood cells are made.
Capillary	A thin-walled blood vessel that carries blood from arteries to veins.
Haemoglobin	The substance that carries oxygen in red blood cells.
Plasma	The liquid part of blood.
Pulse	The feeling of the heart beating that can be felt in arteries. The pulse rate is the number of times the pulse is felt in a minute.
Vein	A blood vessel that carries blood towards the heart.
White blood cells	Blood cells that fight micro-organism.
Backbone	Series of small bones (vertebrae) that forms a chain to support the main part of some animals' bodies.
Cartilage	A slippery substance that is found on the ends of some bones and used to help form some body parts such as the ear and nose.
Fixed joint	A place where two or more bones meet but cannot move.
Ligament	A band of tissue that connects bones together.
Tendon	A cord of tissue that connects a muscle to a bone.
Antagonistic pair	Two muscles that work a joint by pulling a bone in opposite directions
Biceps	Muscle in the upper arm that helps to raise and lower the lower arm.
Impulse	An electrical signal that travels in the nervous system.
Mitochondria	Small structures in the cytoplasm of all cells where respiration occurs.
Nerve	An organ that is made of nerve cells (neurons) and carries nerve impulses.
Spinal cord	Large bundle of nerves that runs through the vertebrae (backbone)

**Section B – Important information**

**Breathing**

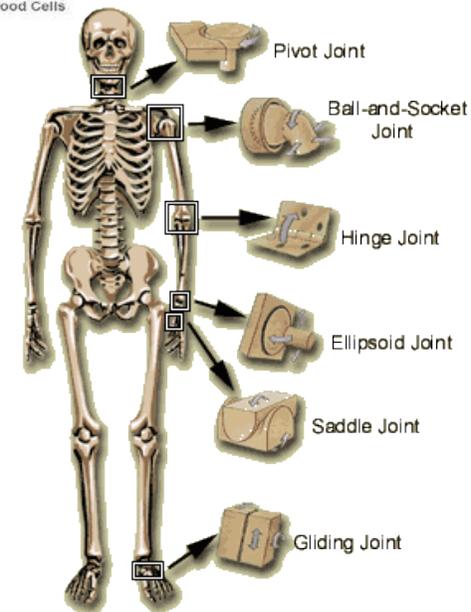
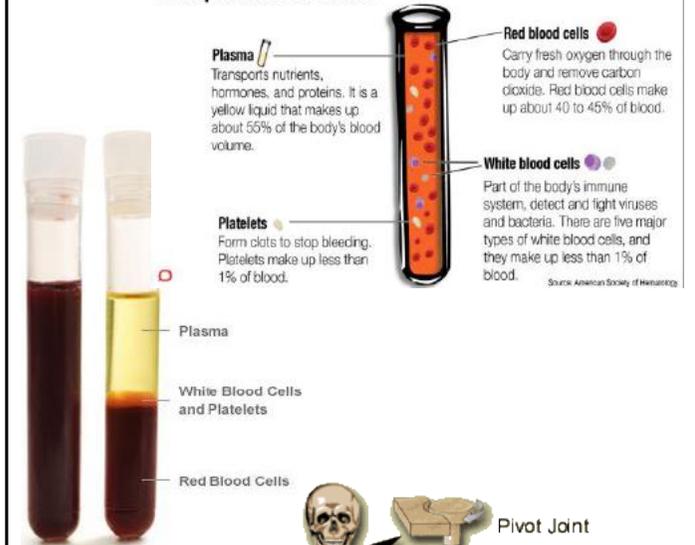
Breathing is when muscles between the ribs and in the diaphragm change the size of the lungs. A muscle cell can get short and fat. When it does this, we say it contracts. When all the cells in muscle tissue contract and relax together, the whole muscle contracts and relaxes.



We need oxygen for our cells to respire and release energy, which is needed for everything our bodies do. Oxygen enters our blood in our lungs. Respiration in cells produce carbon dioxide gas, which enters your blood and is then released when you breathe out.

**Section C - Diagrams**

**Components of blood**



Section A: Key Vocabulary	
Keyword	Definition
addictive	If something makes you feel that you need to have it, it is said to be addictive.
Caffeine	A stimulant that increases the speed at which nerves carry impulses. Found in coffee, tea and cola drinks.
Cannabis	A drug that can cause memory loss with long term abuse.
Cocaine	Very powerful and harmful stimulant that can cause blocked arteries and mental problems with long-term abuse.
Drug	Substance that affects the way your body works.
Ecstasy	A stimulant that can cause depression, mental illness and even death with long-term abuse.
Heroin	A very dangerous depressant drug. Causes vomiting and severe headaches.
Medicine	A drug that helps the body to ease the symptoms of a disease or cure the disease.
Nervous system	Your brain, spinal cord and all your nerves.
Reaction time	The time it takes you to respond to things happening around you.
Stimulant	Drug that increases the speed at which nerves carry messages (e.g caffeine)
Substance abuse/misuse	Taking any substance in a way that causes harm to the body.

**Section B – Important information**

**Drugs**

Not all drugs are illegal. Some, such as alcohol and antibiotics are legal, but are restricted by age or are prescription only

Recreational drugs – taken for pleasure. Caffeine, nicotine (from cigarettes) and alcohol are legal recreational drugs.

Stimulants – often affect the nervous system and make the impulses that control the body happen faster.

Depressants – slow the body’s impulses down. Alcohol is a depressant and large quantities can affect a person’s behaviour.

**Antagonistic muscles**

When you lift your arm, the biceps muscle contracts. When you put your arm down, the biceps muscle is stretched.

When you lift your arm, the triceps muscle is stretched. When you put your arm down, the triceps muscle contracts.

**Section C - Diagrams**

**The skeleton**

**Functions of the skeleton:**

1. Movement
2. Support
3. Protection
4. Making blood cells

circles of bone produced by bone-making cells called osteoblasts

cartilage tissue

Spongy bone material has many spaces in it to keep the whole bone light.

Compact bone material is very hard and strong, but is also heavy. It is used to form a tube shape, which is a very strong shape.

The inside of a bone is filled with bone marrow tissue. This helps to reduce the mass of the bone (and the bone marrow makes blood cells).

You are born with around 270 bones, some of which fuse as you get older, leaving an adult with 206.

The smallest bone in the body is the stirrup bone in the ear which helps to transfer sound waves to the inner ear.

**Circulation**

capillaries in lungs

blood from lungs in a vein

blood to lungs in an artery

blood to rest of body in an artery

blood from rest of body in a vein

capillaries in small intestine

capillaries in leg

capillaries in other parts of the body

vein

artery

muscle tissue

heart chambers

The left side of the heart has much more muscle than the right.

The heart muscle tissue contracts, forcing blood out of the chambers.