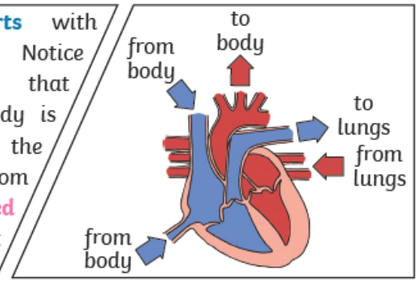
# Science:
# Animals including Humans

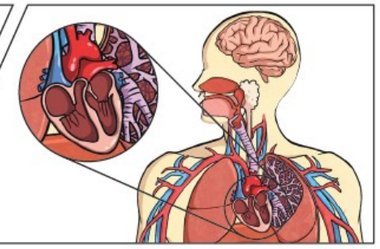
Mammals have **hearts** with four chambers. Notice how the blood that has come from the body is **deoxygenated**, and the blood that has come from the lungs is **oxygenated** again. The blood isn't actually red and blue: we just show it like that on a diagram.

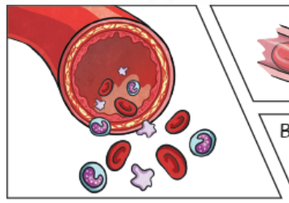


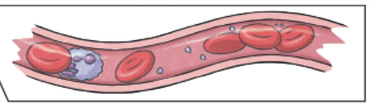

**deoxygenated blood** ➡ ⬅ **oxygenated blood**

The **heart** pumps blood to the lungs to get oxygen.

It then pumps this **oxygenated blood** around the body.







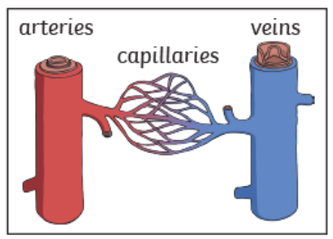
Blood transports:

- gases (mostly oxygen and carbon dioxide);
- **nutrients** (including water);
- waste products.

The liquid part of blood contains water and protein. This is called plasma.

Capillaries are the smallest **blood vessels** in the body and it is here that the exchange of water, nutrients, oxygen and carbon dioxide takes place.

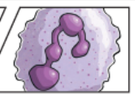
Arteries carry **oxygenated blood** away from the **heart**.




Veins carry **deoxygenated blood** toward the **heart**.

Plasma is liquid. The other parts of your blood are solid.

Platelets help you stop bleeding when you get hurt.



Red blood cells carry oxygen through your body.

White blood cells fight infection when you're sick.

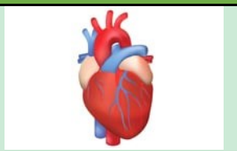
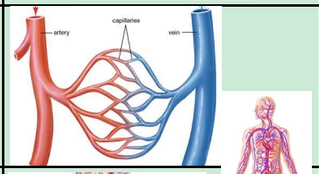
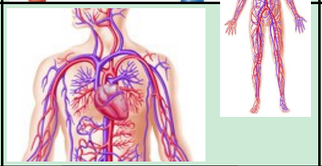
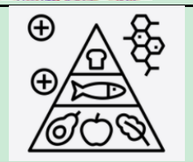
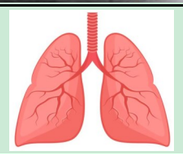

## Lifestyle

- Drugs can be both beneficial and harmful to the body.
- Alcohol and smoking have negative effects on the body.
- A healthy diet involves eating the right types of nutrients in the right amounts.
- Exercise is an important part of a healthy lifestyle.

## Regular exercise:

- Strengthens muscles, including the heart muscle;
- Improves circulation;
- Increases the amount of oxygen around the body;
- Releases brain chemicals which help you feel calm and relaxed;
- Helps you sleep more easily;
- Strengthens bones;
- Can help to stop us from getting ill.

## Vocabulary

| | | |
|---|---|---|
| **heart** |  | An organ which constantly pumps blood around the circulatory system. |
| **pulse rate** |  | How many times your heart beats in one minute. |
| **blood vessels** |  | The tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessel. |
| **circulatory system** |  | A system which includes the heart, veins, arteries and blood, transporting substances around the body. |
| **nutrients** |  | Substances that animals need to stay alive and healthy. |
| **drug** |  | A substance containing natural or man-made chemicals that has an effect on your body when it enters your system. |
| **lungs** |  | Bag-like organs used for breathing. They are part of the body's respiratory system. All animals that have a backbone and breathe air have lungs. |
| **oxygen** |  | A colourless, odourless, tasteless gas essential to living organisms. Approximately 21% of the air we breathe is oxygen. |
| **carbon dioxide** |  | A chemical compound made up of one carbon and two oxygen atoms: $CO_2$. It is a gas at room temperature. Animals release carbon dioxide when they breathe out. In the process of photosynthesis, plants use carbon dioxide to make food. |
| **diet** |  | The variety of foods that are eaten over a period of time. |