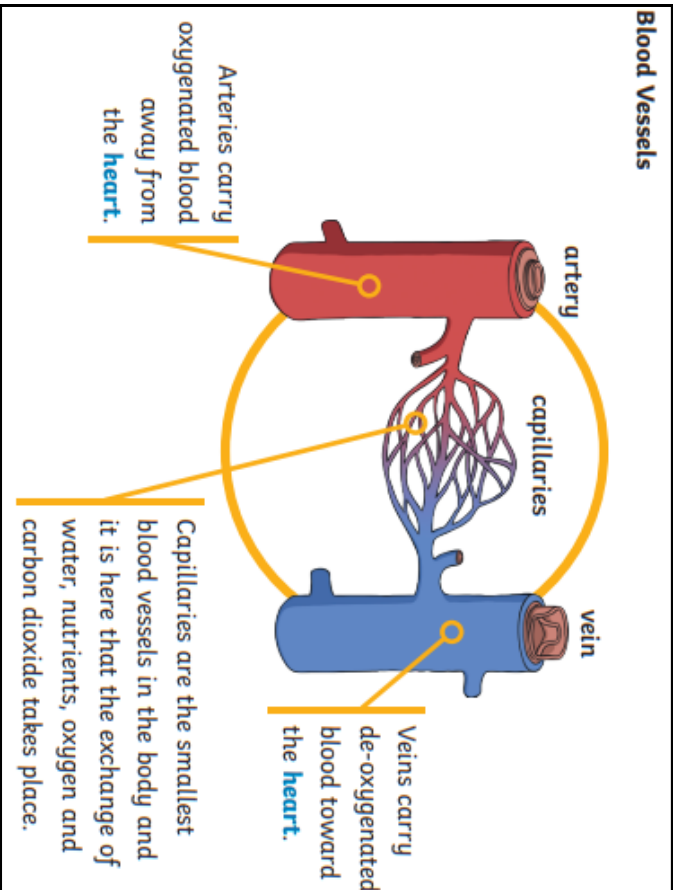
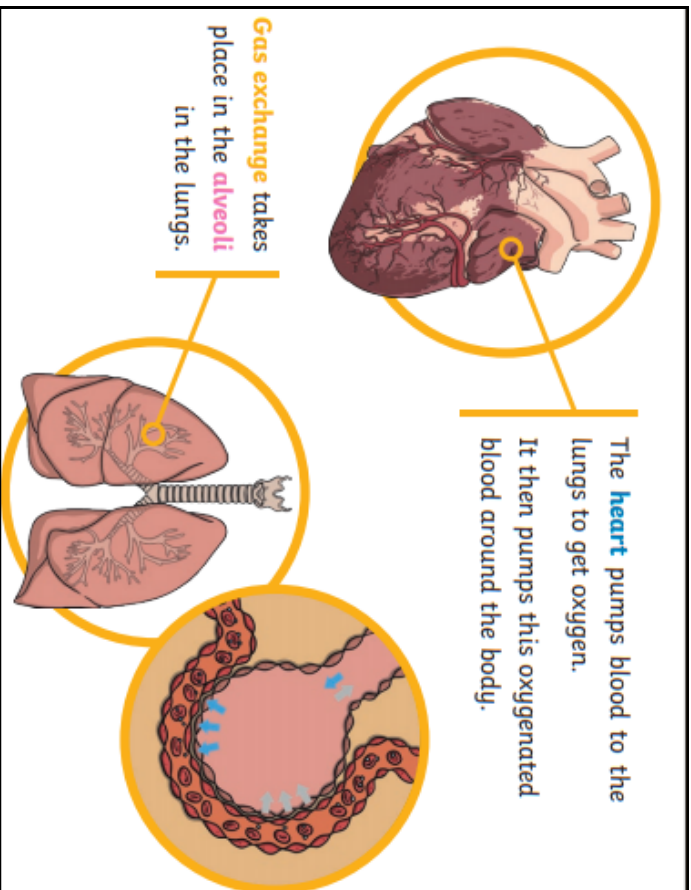


Year 6—Animals including humans Knowledge Organiser



Oxygen in the body



Blood Vessels

Nutrients in the body

Stomach acids break food down into a substance called chyme. This passes through to the duodenum where bile and enzymes break up larger molecules into their smaller parts. After the nutrients have been broken down into smaller separate molecules in the duodenum, they can then pass through to the rest of the small intestine, where they are absorbed into the blood stream.

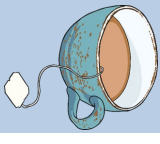
The small intestine is a muscular tube with several layers. It is lined with tiny hair like villi which are attached to arteries and veins. The chyme (which now contains smaller broken down nutrient molecules) is moved back and forth in the small intestine. The nutrients pass through the villi and are absorbed into the blood vessels. Bacteria in the large intestine break down waste food for any more nutrients which are absorbed.

Drugs and Alcohol

A drug is any substance that has an effect on your body when it enters your system. Drugs contain chemicals which can come from natural sources or are man-made.

Legal Drugs:

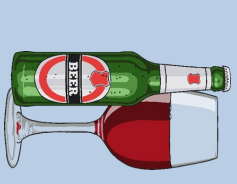
Legal drugs include medicines like cough syrup and substances like tea or coffee. These can be bought in shops.



If used properly, these are not substances that are considered harmful. However, even drugs you can buy in shops can be dangerous if you take too many of them. For example if you repeatedly drink too much alcohol over many years it can lead to:

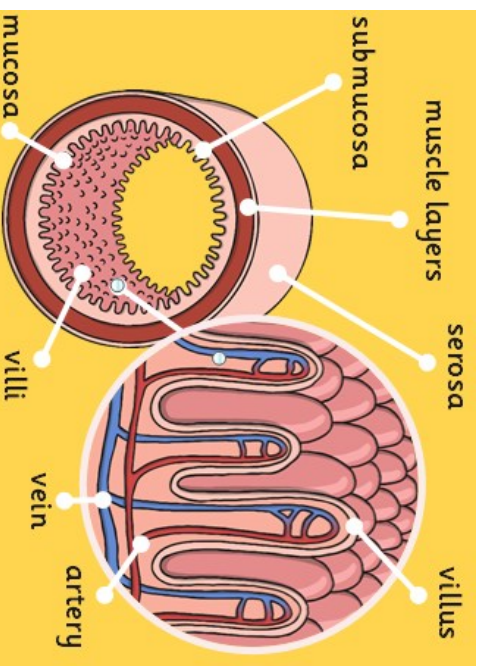
- High blood pressure
- Stomach cancer
- Liver failure

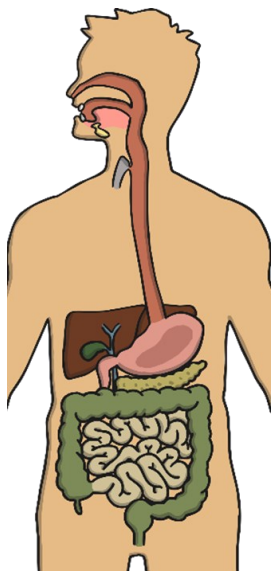
Illegal Drugs:



Unlike medicines, which are used to treat illness or disease, these drugs are taken by choice. They are illegal to buy, take or sell. They include cannabis, heroin, ecstasy and cocaine. Illegal drugs can be in many forms such as powders, pills and dried plants that are smoked.

Illegal drugs can damage the brain, heart, and other important organs. Cocaine, for instance, can cause a heart attack. It's often harder to think clearly and make good decisions while taking drugs. People can do dangerous things that could hurt them — or other people — when they use drugs.





Water in the body

Water enters the body in the mouth. Unlike other nutrients it is not broken down by enzymes or bile. A small amount of water is absorbed through the stomach but the majority passes through to the small intestine. Water is absorbed in the small intestine in the exact same way as other nutrients are absorbed – through the villi into bloodstream via the blood vessels. The large intestine (also called the colon) is similar to the small intestine in structure except that it does not contain villi. By the time waste material reaches the large intestine, 90% of water has already been absorbed. The waste food enters into the cecum which is the first part of the large intestine. It moves through the large intestine through a series of **mass movements**. These are long, slow moving waves of muscles contracting and relaxing. The rest of the water in the waste food is absorbed in all the different parts of the colon.

The impact of exercise on the body

Helps you fall asleep faster and deeper so you are better rested.

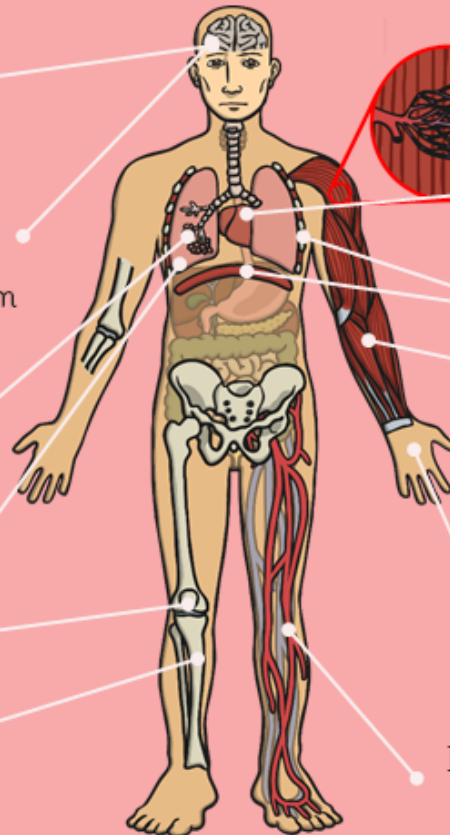
Stimulates and releases **brain** chemicals – for example endorphins leave you feeling happier and serotonin helps keep your mood calm and leaves you feeling relaxed.

Increases the number of air sacs (alveoli).

Increases the amount of oxygen delivered to and carbon dioxide removed from the body.

Joints are more stable.

Bones increase in width and density (The denser the bone, the stronger it is).



Increases the number of **capillaries** in the muscles.

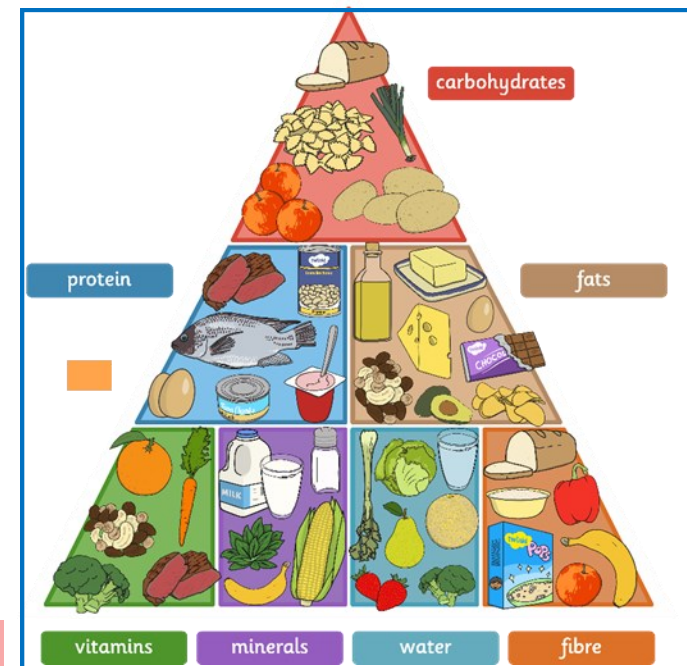
Strengthens **heart** muscle.

Strengthens **diaphragm** and **intercostal muscles**.

Strengthens **muscles**.

When you exercise your body increases the circulation of blood – this means that nutrients are delivered and waste taken away faster which improves parts of the body like skin.

Increases the volume of blood and red blood cells.



Healthy Diet:

A healthy diet involves eating the right types of nutrients in the right amounts. This is also called a 'balanced diet'. Each of these nutrient types should be consumed over the course of **each day** but **not necessarily at each meal!**

One way to make sure that you eat a healthy diet is to ensure that you eat a variety of different foods. There may be certain foods that you don't like, but make sure that you find alternatives or substitutes so that your diet is still balanced.

Unhealthy Diet:

An unhealthy diet is one which is not balanced – too much of some nutrient groups are eaten and not enough of the others. It is recognised that eating too much fat is bad for humans, however it needs to be remembered that eating, say, apples all day every day is not healthy either!!