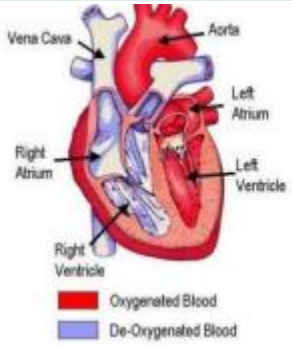
Year 6 Science – Animals including Humans

Key vocabulary

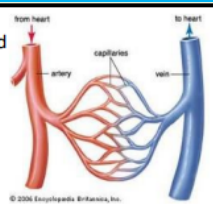
aorta	the main **artery** through which blood leaves your **heart** before it flows through the rest of your body
arteries	a tube in your body that carries **oxygenated** blood from your **heart** to the rest of your body
atrium	one of the chambers in the **heart**
blood vessels	the narrow tubes through which your blood flows. **Arteries**, **veins** and **capillaries** are **blood vessels**.
capillaries	tiny **blood vessels** in your body
carbon dioxide	a gas produced by animals and people breathing out
circulatory system	the system responsible for circulating blood through the body, that supplies **nutrients** and **oxygen** to the body and removes waste products such as **carbon dioxide**.
deoxygenated	blood that does not contain **oxygen**
heart	the **organ** in your chest that **pumps** the blood around your body
lungs	two **organs** inside your chest which fill with air when you breathe in. They **oxygenate** the blood and remove **carbon dioxide** from it.
nutrients	substances that help plants and animals to grow
organ	a part of your body that has a particular purpose
oxygen	a colourless gas that plants and animals need to survive
oxygenated	blood that contains **oxygen**
pulse	the regular beating of blood through your body. How fast or slow your **pulse** is depends on the activity you are doing.
respiration	process of respiring; breathing ; inhaling and exhaling air. In KS3 Science, this process is referred to as **ventilation**.
veins	a tube in your body that carries **deoxygenated** blood to your **heart** from the rest of your body
vena cava	a large **vein** through which **deoxygenated** blood reaches your **heart** from the body
ventilation	The exchange of air between the lungs and the atmosphere so that **oxygen** can be exchanged for **carbon dioxide**
ventricle	one of the chambers in the **heart**
via	through

What is in a heart?

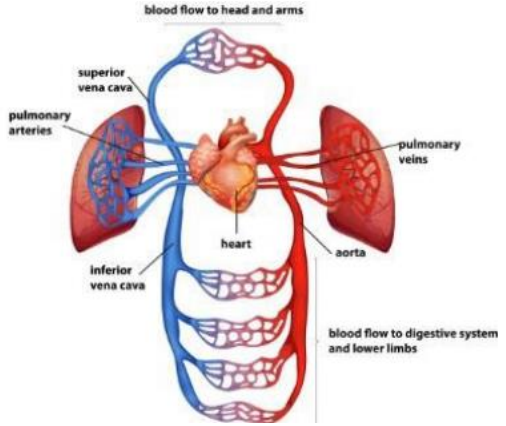


- The **heart** is composed of four chambers; the right **atrium**, the right **ventricle**, the left **atrium** and the left **ventricle**.
- How often your **heart** pumps is called your **pulse**.

Key Knowledge

What is the **circulatory system?**	• The **circulatory system** is made of the **heart, lungs** and the **blood vessels** • **Arteries** carry **oxygenated blood** from the **heart** to the rest of the body • **Veins** carry **deoxygenated blood** from the body to the **heart** • **Nutrients, oxygen** and **carbon dioxide** are exchanged **via** the **capillaries** 
Choices that can harm the **circulatory system**	• Some choices, such as smoking and drinking alcohol can be harmful to our health. • Tobacco can cause short-term effects such as shortness of breath, difficulty sleeping and loss of taste and long-term effects such as lung disease, cancer and death • Alcohol can cause short-term effects such as addiction and loss of control and long-term effects such as **organ** damage, cancer and death
Why is exercise so important?	Exercise can: • tone our muscles and reduce fat • increase fitness • make you feel physically and mentally healthier • strengthens the **heart** • improves **lung** function • improves skin

How does a heart work?



1. The right atrium collects the deoxygenated blood from the body, via the vena cava. It sends the blood to the right ventricle.
2. The right ventricle pumps the deoxygenated blood to the lungs. Here the blood picks up oxygen and disposes of carbon dioxide.
3. The lungs send oxygenated blood back to the left atrium which pumps it to the left ventricle.
4. The left ventricle pumps the blood to the rest of the body, via the aorta.

Year 6 Science – Animals including Humans – Working Scientifically

Key vocabulary

accurate measurements	Using equipment to make accurate measurements e.g. 63ml or 17.2cm
axis	Line graphs consist of two axes: x-axis (horizontal) and y-axis (vertical)
bar graph	These graphs are used to compare data using bars. A graph that is drawn when one of the data sets is discontinuous (discrete) or categoric data.
biology	Biology is the scientific study of life.
comparative test	When you compare one event with another and identify different outcomes e.g. does a red car go faster than a yellow car?
compare	Note similarities and differences between different things e.g. compare different types of materials
conclusion	An explanation of what was learned from an investigation. It may agree or disagree with the hypothesis.
control variable	A control variable are variables in an experiment that you keep the same. They remain constant and unchanged throughout the investigation.
data	Information, either qualitative or quantitative, that has been collected.
diagram	A drawing that explains how a system, machine, process, plan, etc., operates or is organised
dependent variable	A variable whose value depends on that of another. In an experiment – what you measure or observe.
fair test	A fair test is a controlled investigation carried out to answer a scientific question. In a fair test, we only change one variable.
independent variable	A variable whose variation does not depend on that of another. In an experiment – the one thing that you change (vary).
line graph	Line graphs are used to track changes over short or long periods of time.
prediction	A prediction is a statement explaining what you think will happen in an experiment. When you predict the outcome of an experiment. A statement suggesting what will happen when a hypothesis is tested.
research	To find out about something using a range of sources.
table	A set of facts of figures presented in rows and columns.

Working Scientifically Skills

Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Using test results to make predictions to set up further comparative and fair tests.
Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.
Identifying scientific evidence that has been used to support or refute ideas or arguments.