Alternative activities

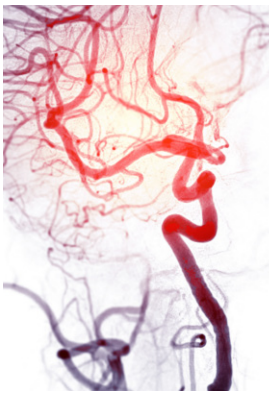
Lesson 1, 2, 3 and 4

Make a blood component model

The resources you will need for this activity include: clear plastic cup or jar, yellow coloured water, red counters, white counters, rice or seeds and a spoon.

Activity: children use the items above to represent the four different components of blood.

1. Add the plasma – fill a cup with the yellow water to represent the plasma.
2. Add the red blood cells – add in lots of the red counters to show the red blood cells (there are more red than white blood cells in blood).
3. Add the white counters (not as many as the red) to represent the white blood cells.
4. Add platelets – sprinkle in rice or seeds to represent the platelet.
5. Ask the children to construct a key for their model and explain the function of each component of blood.



Alternative method: https://letsgolivescience.com/activity/how-to-make-blood/

Blood volume estimation

The resources you will need for this activity include: measuring jugs, water (coloured red), weighing scales (optional), recording sheet.

Activity: this activity helps children estimate how much blood is in the human body.

1. Explain that humans have about 7–8% of their body weight in blood so the average adult has approximately 5 litres. The amount of blood volume depends on body size.
2. Give a sample body weight (e.g. 40 kg child).
3. Pupils calculate:
   - 7% of 40 kg = 2.8 litres
4. Measure this amount of coloured water using jugs.
5. Visually compare blood volume to everyday containers.
6. If appropriate - children weigh themselves and calculate their blood volume (note that this could be a sensitive issue for some children).

Discuss with the children

- Why do larger people have more blood?
- What would happen if someone lost a lot of blood?
- Why is blood volume important for survival?

Alternative activities

Lesson 1, 2, 3 and 4

How quickly does my heart return to its resting rate after exercise?

The resources you will need for this activity include: stopwatch



Activity: children investigate how quickly their heart rates return to a resting value after exercise.

When planning their investigation, children should be encouraged to think about the **independent variable** (time for heart rate to return to resting level after exercise), the **dependent variable** (heart rate in beats per minute), and the **controlled variables** (e.g. length and type of exercise, the person doing the exercise, the method used to measure heart rate, resting conditions).

How does exercise effect the brain?

Resources you will need: https://www.bbc.co.uk/teach/terrific-scientific/articles/z6gngwx all the resources need to complete the investigation are outlined on the BBC website.

Activity: Dr Chris and Dr Xand van Tulleken help investigate if exercise really can affect our brains as well as our bodies. Instructions on completing this investigation are on the website.

How do scientific organisations help keep our hearts healthy?

Resources you will need: internet access.



Activity: This activity will help children to understand how research by a scientific or medical organisation is used to improve heart health.

Children choose a health organisation e.g. British Heart Foundation. Using research, children find the answers to the following questions:

1. What is the organisation (What does it do? Who does it help?)
2. What health problem does it focus on?
3. How does the organisation help people?
4. How does this help people stay healthy?