

# All about blood

## What is blood?

Blood is the red fluid that is pumped around your body by the heart.

### It has many important jobs:

- Carrying oxygen and nutrients to the lungs and tissues.
- Making blood clots to stop your body from losing blood.
- Carrying cells and antibodies that fight infections.
- Taking waste products to the kidneys and liver which filter and clean the blood.

Your blood moves around in tunnel-like tubes inside your body called blood vessels.

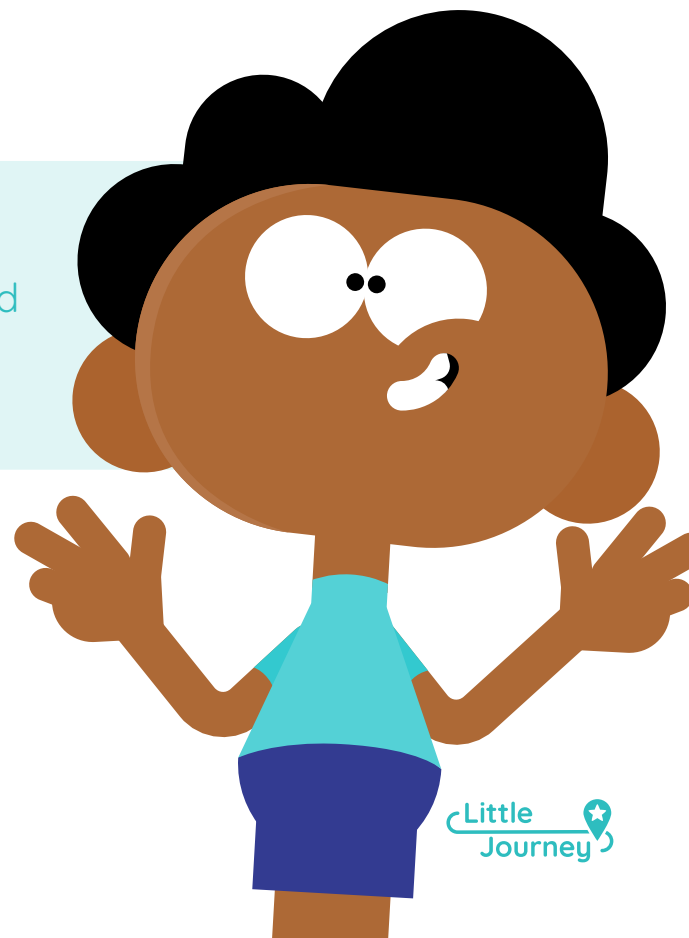
There are **three** types of blood vessel:

- Arteries
- Veins
- Capillaries

### Did you know?

An adult has about 5 litres of blood in their body; that's the same as 10 bottles of water!

In fact, there is so much blood inside your body that it makes up 7-8% of your weight!



# All about blood

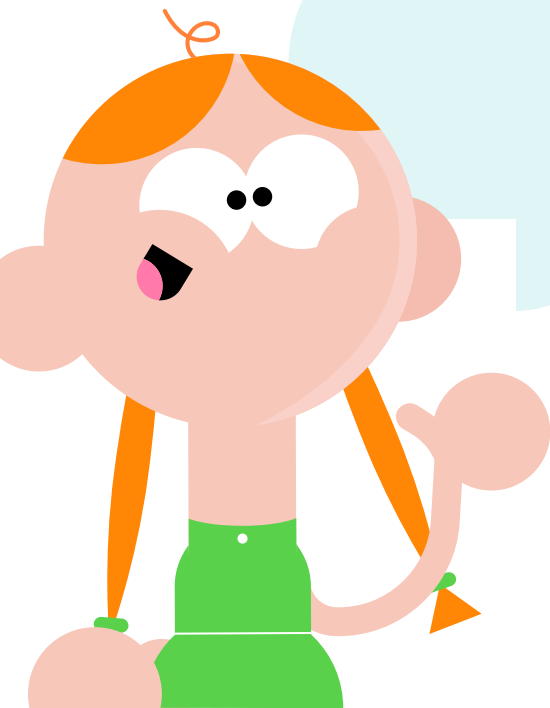
## What is blood made of?

Blood is made up of four different things:

- 1. Plasma**  
The liquid part of your blood is called plasma. Its job is to carry nutrients around your body as well as waste materials that your body wants to get rid of.
- 2. Red Blood Cells**  
The red colour of blood comes from the red blood cells. Their job is to carry oxygen all around the body.
- 3. Platelets**  
If a blood vessel is damaged, platelets travel to the injured area and help to stop the bleeding by forming clots and scabs.
- 4. White Blood Cells**  
White blood cells help fight infection and illness.

### Did you know?

The human body makes 17 million red blood cells every second.



**Try this fun activity**  
to help you understand  
why your blood is important  
and what it is made up of!!



# What You Will Need:



- A plastic cup or mug



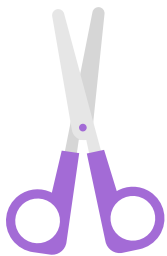
- Red lentils (the red blood cells)



- Uncooked rice (the white blood cells)



- A piece of paper (the platelets)



- A pair of scissors



- A large bowl or tray for mixing

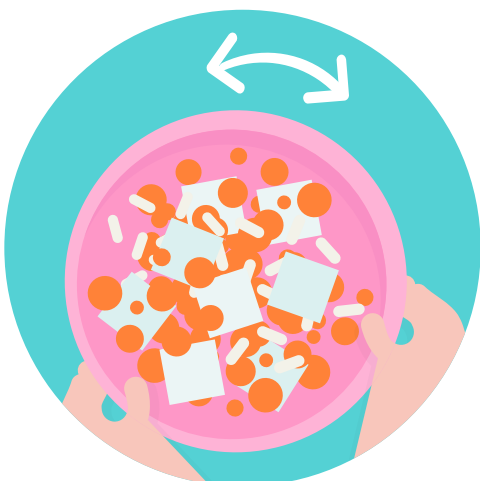
# Instructions:

1. Fill your cup with red lentils, then pour them into the bowl (or tray). These are our red blood cells.



2. Add half a cup of rice. These are our white blood cells. Mix the lentils and rice together with your hands. Notice that we have more red lentils in the bowl than rice.

3. Cut the piece of paper into squares and add them to your bowl. These represent our platelets.

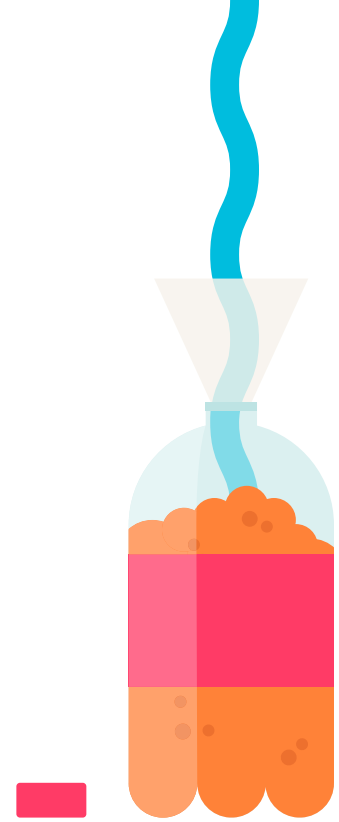


4. Carefully tip the bowl or tray from side to side, without spilling. Watch how everything moves together.

# Extension Activities:

## Bottle it!

1. Start with a clear, empty drinks bottle.
2. Fill half the bottle with the materials you have in your bowl. (Top Tip: Make a funnel using a piece of paper to help you pour the materials into the bottle.)
3. Top your bottle up with water and make sure the lid is on properly!



What happens when you gently rock the bottle from side to side?



What happens when you shake the bottle?



What do you notice if you hold the bottle still?



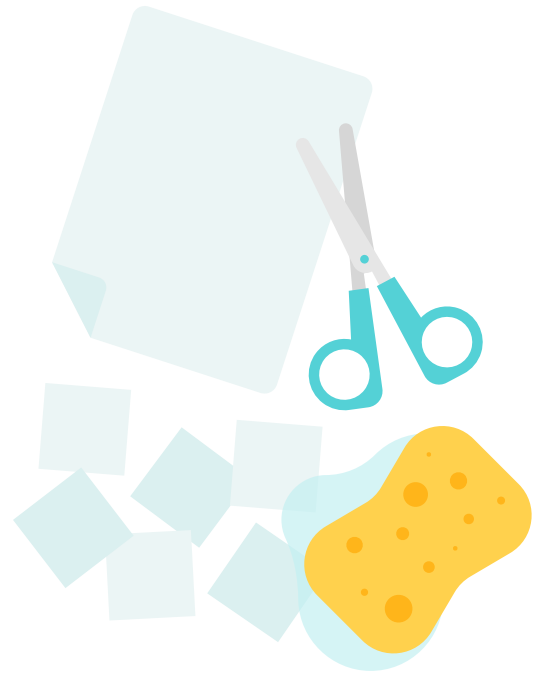
### Create your own!

What other materials can you find at home to make your own version of blood? Remember to include all of the different parts!

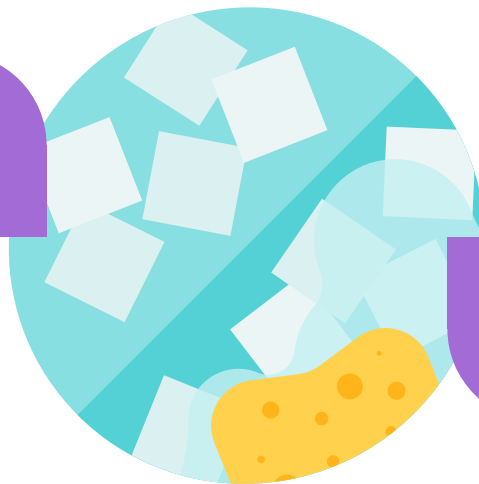
# Extension Activities:

## Scab-ulous!

1. Make some more platelets by cutting up a piece of paper into small pieces.
2. Dampen the pieces of paper using a wet sponge.
3. Place the damp pieces of paper on a flat surface and make sure they are slightly overlapping. Then let them dry. This is like how platelets gather to heal a cut or graze.



What happens if you use **less** water?



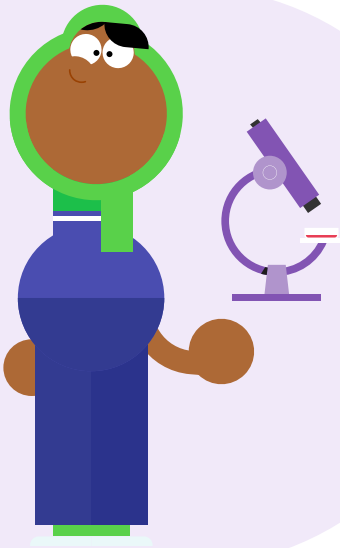
What happens if you use **more** water?



### Did you know?

Your blood is made inside your bones.  
Talk about a super skeleton!

# Having A Blood Test:



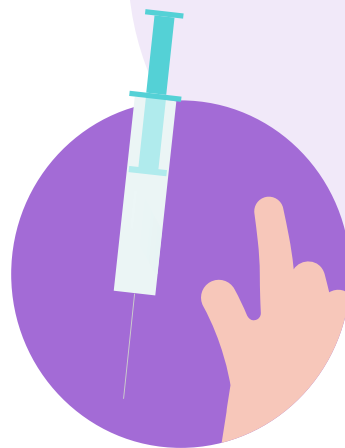
## **Blood tests are used to test for many things.**

During a blood test, a small amount of blood is taken either from a vein in the arm or from a fingertip.

When taking blood from a vein, the nurse will wrap a small strap called a tourniquet around your upper arm. This is like a belt for your arm, it goes on tightly so that your veins pop up and are easy to find.

They will take a sample (a small amount) of blood from your vein, using a small needle. The blood will be collected in a test tube. Sometimes, the nurse might take blood from your fingertip instead.

They will make a tiny cut in your finger and a small amount of blood will be collected in a thin tube. Sometimes the nurse needs to collect more than one tube of blood, but this is okay as our bodies are designed to replace blood very quickly.



In both tests, the blood container will be labelled so the doctors know who it belongs to. It will then be sent off to a laboratory for testing.



# Let's Play: Blood Test

## Blood Test Role Play

Let's pretend you are the phlebotomist and you need to prepare your patient for a blood test!

Here's what you will need:



- A patient (this can be your doll, teddy bear, grown-up, or even a pet)



- A stretchy band or old stretchy fabric (please only use rubber bands under supervision)



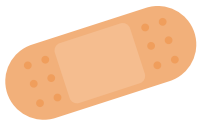
- A cup of cold water



- A straw.



- A cotton pad



- A plaster



- An envelope

### Optional Extras:

A lab coat and stethoscope, if you have them.





# Let's Play: Blood Test

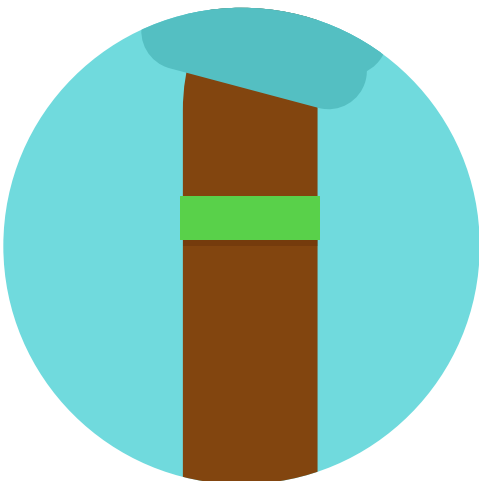
**1.** Invite your patient to the blood test room and make sure they are sitting comfortably.

**2.** Tell them why they need a blood test.



**3.** Prepare your patient for their blood test. Make sure they are sitting still and have rolled up their sleeve.

**4.** Wet the cotton pad with cold water and press it onto your patient's arm. This will help clean the skin.



**5.** Tie a stretchy band around your patient's upper arm.

# Let's Play: Blood Test

- Using the straw, put the end of the straw on the inside of your patient's elbow. (The real needle won't be this long!)

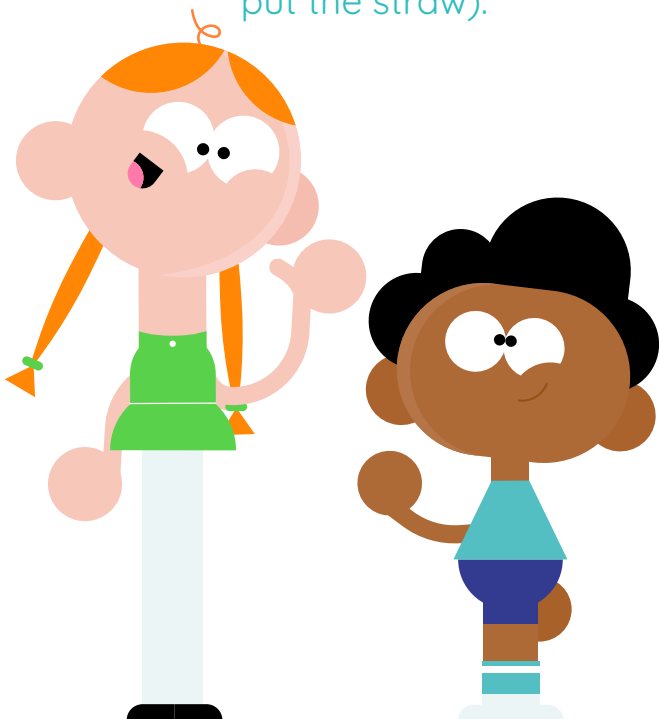


- Now, pretend that the blood sample is in the straw. Put the straw in the envelope and pretend you are sending it to a laboratory where scientists can look at the blood closely.

- Take the band of your patient's arm and put a plaster on the inside of the patient's elbow (where you put the straw).



- That's it. All finished. Say 'well done' to your patient!



# Quiz Time:



Why is blood important for my body?

What is a blood test?

Why is blood red?

What happens to the blood taken during the blood test?



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