Teacher Resource

Blood Donation Crisis

EPISODE 17
14th June 2022

KEY LEARNING
Students will develop an understanding of the biology of blood and ways to encourage people to donate blood.

CURRICULUM
Science – Year 4
Science knowledge helps people to understand the effect of their actions.

Science – Year 5 and 6
Scientific knowledge is used to solve problems and inform personal and community decisions.

Science – Year 7
People use science understanding and skills in their occupations, and these have influenced the development of practices in areas of human activity.

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available.

Focus Questions

Discuss the BTN story as a class and record the main points of the discussion. Students will then respond to the following:

1. How many Australians will need to be give blood at some point in their life?
    a. 1 in 3
    b. 1 in 10
    c. 1 in 50
2. What are the components of blood?
3. Why is there a shortage of blood at the moment?
4. The Red Cross needs about 33,000 donations of blood and plasma each week. True or false?
5. What was surprising about this story?

Activity: Class Discussion

Discuss the BTN story as a class. Create a class mind map with BLOOD DONATION in the middle. Ask students to record what they know about blood donation. What questions do they have? In small groups, ask students to brainstorm responses to the following questions:

- What is blood donation?
- Do you know anyone who has either donated blood or has received a blood donation?
- How do you feel about blood donation?
- Why is there a shortage of blood donations at the moment?
- What questions do you have about this topic?

Activity: Glossary

Students will brainstorm a list of key words that relate to the BTN Blood Donation Day story. Below are some words to get them started. Students will create their own class glossary of scientific keywords and terms. Consider using photos, illustrations and/or diagrams to help explain each keyword.

PLATELETS	PLASMA	WHITE BLOOD CELLS
BLOOD GROUPS	RED BLOOD CELLS	BLOOD DONATION

Activity: Six Hat Thinking

As a class, use Edward De Bono's Six Hat Thinking to explore the issues raised in the BTN Blood Donation Crisis story. Make your own coloured hat cut outs and place on the floor. Students will take it in turns answering questions in relation to what they already know about the issue, what they have learned from the story and what they want to learn further about the topic. Ask students to respond to the following questions:

- How did the Blood Donation Crisis story make you feel?
- What do you know about blood donation?
- What have you learnt from the story?
- Were there any positives from the story? If so, what were they?
- What are some of the negatives or challenges that you learnt from the story?
- Why is it important to find out more about blood donation?
- What questions were raised during this activity?
- What do you want to learn further about this topic?

Reflection

After this activity, ask students to reflect on what they have learnt. Students can include details about how their thinking on this issue has changed.

Activity: Research inquiry

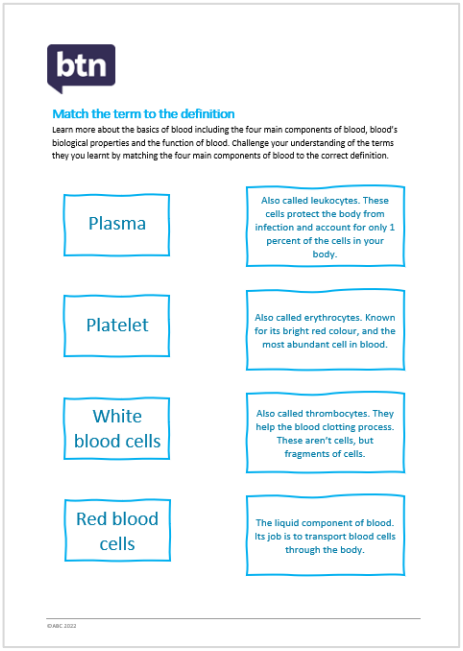
The KWLH organiser provides students with a framework to explore their knowledge and consider what they would like to know and learn. Students will develop their own question/s to research. Students will collect and record information from a wide variety of sources.

What do I **know**?	What do I **want** to know?	What have I **learnt**?	**How** will I find out?

Activity: The science of blood

Students will learn more about the basics of blood including the four main components of blood, blood's biological properties and the function of blood. Students will create their own class glossary of scientific keywords and terms that relate to blood and blood donation.

Challenge students understanding of the terms they have learnt by matching basic blood terms to the correct definition. See the template at the end of the activity.


btn

Match the term to the definition

Learn more about the basics of blood including the four main components of blood, blood's biological properties and the function of blood. Challenge your understanding of the terms they you learnt by matching the four main components of blood to the correct definition.

Plasma	Also called leukocytes. These cells protect the body from infection and account for only 1 percent of the cells in your body.
Platelet	Also called erythrocytes. Known for its bright red colour, and the most abundant cell in blood.
White blood cells	Also called thrombocytes. They help the blood clotting process. These aren't cells, but fragments of cells.
Red blood cells	The liquid component of blood. Its job is to transport blood cells through the body.

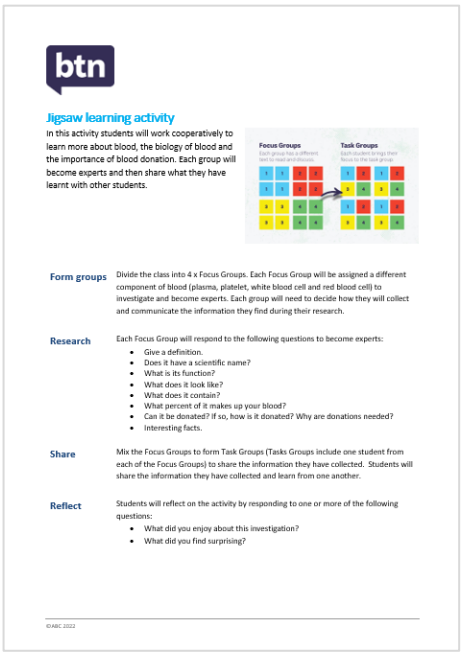
©ABC 2022

Students will then research and complete one or more of the following:

- Create a quiz about the components of blood and then challenge your classmates.
- Design a public education campaign to raise awareness about blood donation.
- Build on your glossary by adding more terms related to the biology of blood. For example, antigens, antibodies, haemoglobin or circulatory system. Use photos, illustrations and/or diagrams to help explain each keyword.

Activity: Jigsaw learning

Consider using jigsaw learning in your classroom, a cooperative activity that enables students to specialise in an aspect of a topic, and then teach what they have learnt to their classmates. See the template at the end of the activity.


btn

Jigsaw learning activity

In this activity students will work cooperatively to learn more about blood, the biology of blood and the importance of blood donation. Each group will become experts and then share what they have learnt with other students.

Focus Groups

Task Groups

Form groups Divide the class into 4 x Focus Groups. Each Focus Group will be assigned a different component of blood (plasma, platelet, white blood cell and red blood cell) to investigate and become experts. Each group will need to decide how they will collect and communicate the information they find during their research.

Research Each Focus Group will respond to the following questions to become experts:

- Give a definition.
- Does it have a scientific name?
- What is its function?
- What does it look like?
- What does it contain?
- What percent of it makes up your blood?
- Can it be donated? If so, how is it donated? Why are donations needed?
- Interesting facts.

Share Mix the Focus Groups to form Task Groups (Tasks Groups include one student from each of the Focus Groups) to share the information they have collected. Students will share the information they have collected and learn from one another.

Reflect Students will reflect on the activity by responding to one or more of the following questions:

- What did you enjoy about this investigation?
- What did you find surprising?

©ABC 2022

Useful Websites

- Blood Donation Day – BTN
- Learn about blood donation – Australian Red Cross
- How bones make blood? – TEDEd
- How the heart actually pumps blood – TEDEd
- Blood Types – Healthdirect
- Why Donate Blood? – Red Cross
- World Blood Donor Day 2022 – World Health Organisation
- Know Your Blood Type Essentials – Red Cross

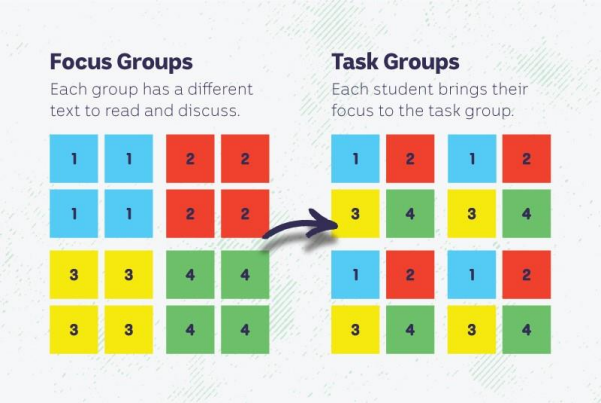
Match the term to the definition

Learn more about the basics of blood including the four main components of blood, blood's biological properties and the function of blood. Challenge your understanding of the terms you have learnt by matching the four main components of blood to the correct definition.

Plasma	Also called leukocytes. These cells protect the body from infection. These cells are produced by bone marrow.
Platelet	Also called erythrocytes. Known for its bright red colour, and the most abundant cell in blood.
White blood cells	Also called thrombocytes. They help the blood clotting process. These aren't cells, but fragments of cells.
Red blood cells	The liquid component of blood. Its job is to transport blood cells through the body.

Jigsaw learning activity

In this activity students will work cooperatively to learn more about blood, the biology of blood and the importance of blood donation. Each group will become experts and then share what they have learnt with other students.



Form groups

Divide the class into 4 x Focus Groups. Each Focus Group will be assigned a different component of blood (plasma, platelets, white blood cells and red blood cells) to investigate and become experts. Each group will need to decide how they will collect and communicate the information they find during their research.

Research

Each Focus Group will respond to the following questions to become experts:

- What is its scientific name?
- What is its function?
- What does it look like?
- What does it contain?
- What percent of it makes up your blood?
- Can it be donated? If so, how is it donated? Why are donations needed?
- Interesting facts.

Share

Mix the Focus Groups to form Task Groups (Tasks Groups include one student from each of the Focus Groups) to share the information they have collected. Students will share the information they have collected and learn from one another.

Reflect

Students will reflect on the activity by responding to one or more of the following questions:

- What did you enjoy about this investigation?
- What did you find surprising?