



Teacher Resource

Blood Donation History

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. What is the process of taking blood from one person and giving it to another called?
 - a. Transmission
 - b. Transfusion
 - c. Donation
2. Name three facts you learnt about the history of blood donation.
3. How many main types of blood are there?
4. How many Australians will need donated blood at some stage?
 - a. One in three
 - b. One in ten
 - c. One in fifty
5. How did this story make you feel?

Activity: Class Discussion

Discuss the information raised in the BTN Blood Donation History story. Ask students to record what they learnt about the history of blood and blood donation on a mind map. What questions do students have? Use the following to guide the discussion:

- Do you know anyone who has either donated blood or has received a blood donation?
- What did you learn about the history of blood?
- What does this story make you wonder?
- How do you feel about blood donation?
- It was interesting to learn that...
- Why do you think it is important to hear about stories like this?
- How has your thinking changed since watching this story?
- What questions do you have about this topic?



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KEY LEARNING

Students will learn about the history of blood transfusions and the importance of donating 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.

Activity: Glossary

Students will brainstorm a list of key words that relate to the BTN Blood Donation History 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	BLOOD DONOR
BLOOD GROUPS	RED BLOOD CELLS	TRANSFUSION

Further investigation

Students will choose additional keywords and terms to add to their class glossary. For example, white blood cells, antigens, antibodies, haemoglobin, blood bank and circulatory system. Students will find a definition and explain to their classmates what the keywords mean.

Activity: Research project

Students will start to think like scientists and develop their own question/s for inquiry, collecting and recording information from a wide variety of sources.

What do I <u>know</u> ?	What do I <u>want</u> to know?	What have I <u>learnt</u> ?	<u>How</u> will I find out?

Students may develop their own question for inquiry or select one or more of the questions below.

- What is a blood transfusion? List some of the reasons why people need to have blood transfusions.
- How does blood travel around the body? Use as many of these terms in your description: circulatory system, oxygen, blood vessels, arteries, heart, circulation.
- What is blood made of? List the 4 main components of blood. Give a description of each and its function.
- Why is blood red?
- What is the function of blood?
- What are the most common and least common blood types in Australia? Create a graph to show percentages.
- What is the history of blood transfusions? Compare how technology has changed. Explore the history of blood transfusions in more detail and create a timeline of significant events.

Activity: Jigsaw learning activity

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

As a class watch this episode of Operation Ouch, [What is blood made of?](#) for a fun look at what blood is made of and where it is made (*Operation Ouch, YouTube*).

Form groups

Divide the class into 5 x Focus Groups. Each Focus Group will be assigned a different area of research related to the science of blood to investigate and become experts.

Areas of research:

1. What are the four main components of blood? (red blood cells/plasma/white blood cells/platelets)
2. Where is blood made? (bone marrow)
3. What transports blood around the body? (veins/arteries/circulatory system)
4. What are the main blood types?
5. What is a blood transfusion?

Each group will need to decide how they will collect and communicate the information they find during their research.

Research

Each Focus Group will work as a team to learn as much as they can about their topic. They will use the following as a guide for their research.

- Write 3 scientific questions to research and answer.
- Include diagrams.
- Include a glossary of key words.
- Interesting facts!

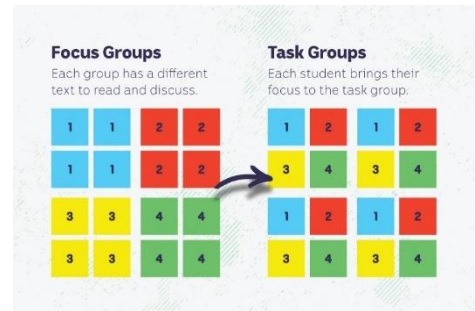
Share

Mix the Focus Groups to form Task Groups (Task 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?



YouTube video: [What is blood made of?](#) (*Operation Ouch, YouTube*)

Activity: Blood Quiz

1. Where is blood made?

A. Heart

B. Bones

C. Muscles

2. You have to be at least 18 years old to donate blood.

A. True

B. False

3. How many Australians will need donated blood at some stage?

A. 1 in 3

B. 1 in 10

C. 1 in 50

4. What system is blood part of?

A. Circulatory

B. Respiratory

C. Digestive

5. Approximately how much blood is in the human adult body?

A. 1 litre

B. 5 litres

C. 10 litres

6. Which part of blood is most important for clotting?

A. White blood cells

B. Red blood cells

C. Platelets

7. What is the process of taking blood from one person and giving it to another called?

A. Transfusion

B. Transmission

C. Donation

8. Which part of blood helps fight infections?

A. White blood cells

B. Plasma

C. Platelets

9. What blood type is considered 'universal' (it can be given to anyone)?

A. A

B. AB

C. O negative

10. Which part of blood carries oxygen?

A. White blood cells

B. Red blood cells

C. Platelets

Quiz Answers: 1B, 2A, 3A, 4A, 5B, 6C, 7A, 8A, 9C, 10B

Activity – Choose a Project

Individually or in small groups, students will choose one of the following projects to work on and then present their findings to the class.

Summary

Write a summary of the story. What was the story about? Why did BTN cover this story?

Pie Chart

What are the 4 main parts of blood? Find out the percentages for each and display your results in a pie chart.

Quiz!

Create a quiz about the science of blood and test your classmates. Use Kahoot! to create your quiz.

Campaign

Design a public education campaign to raise awareness about blood donation. Think about your campaign's aim, target audience, and the value of raising awareness in your community.

Useful Websites

- [Blood Donation Day](#) – BTN
- [Blood Donation Crisis](#) – BTN
- [National Blood Donor Week](#) – Australian Red Cross Lifeblood
- [History of Blood Transfusion](#) – American Red Cross
- [How do blood transfusions work?](#) – Ted
- [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](#) – World Health Organisation
- [Know Your Blood Type Essentials](#) – Red Cross