Life's Blood

Lesson Overview

In this lesson students will learn the function of each of the four components of blood.

Standards Addressed

SC 2005 7-3.2 Recall the major organs of the human body and their functions within their particular body system.

SC 2014 7.L.3B.2 Construct explanations for how systems in the human body (including circulatory, respiratory, digestive, excretory, nervous, and musculoskeletal systems) work together to support the essential life functions of the body.

NGSS MS-LS 1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

Disciplinary Literacy Best Practices

Jigsaw
Peer Dialogue

Lesson Plan

Time Required: One 60-minute Class Period

Disciplinary Vocabulary: plasma, red blood cells, white blood cells, platelets

Materials Needed:

- Copies of Blood Chart
- STC Human Body Systems Workbook (pages 134-137)

Assessment:

Completed Blood Chart

Engage

- Teacher will use two plastic bottles filled with red food coloring to represent the amount of blood that circulates throughout the body.
- Key Questions:
  - What state of matter does blood resemble?
  - Do all of the parts of the blood have the same job?

Explore

- Students will be divided into groups of four.
- Each group will observe diagrams of the circulatory system, such as the ones found in the STC Human Body Systems Student Workbook.
- Students should take-away the idea that the circulatory system does the job of moving important nutrients and blood back and forth from the body through the heart and lungs and back to the body.

Explain

- Next, students will observe a picture of blood samples. Teacher will provide background information about the fact that if the blood were drained out of the body, it would fill a 3-liter bucket.
- Key Questions:
  - Can your blood be separated into individual parts?
  - How is blood considered a liquid if it is also made up of blood solids?
- Students will identify that the plasma part of their blood makes up more than 55% of the blood which makes it resemble the properties of a liquid.

Extend

- Student groups will number off (1, 2, 3, 4) and divide into expert groups to further study the components of blood using the jigsaw strategy. All students identified as number 1 will read a text selection on red blood cells. Students identified as number 2 will read a text selection on white blood cells. Students identified as number 3 will read a text selection on platelets. Students identified as number 4 will read a text selection on plasma.
- As students read, they will select from a list of characteristics to identify the ones that are characteristics of their assigned blood component. Characteristics will be recorded in the "Blood Chart."
- Home groups will reform and each expert will share a summary of the information gathered about their blood component with the others in their group.

Teacher Biographical Information

Students were engaged and everyone had a specific task to complete. All groups shared with the class so that more discussion could take place about the important functions of each of the parts of the blood. Students then viewed a picture of blood that had been separated into its different components.

Lesson Author:

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Life's Blood: Blood Chart

	Red Blood Cells	White Blood Cells	Plasma	Platelets
1.				
2.				
3.				
4.				

Choose from the following characteristics of blood. Write each characteristic in a correct box to describe each component of blood.

- 25 trillion cells
- pale, yellow fluid
- leukocytes
- repair crew
- carry O_2 & nutrients
- largest cell
- form clots
- fibrinogen
- hemophilia
- liquid part of blood
- mostly water
- 90% of blood
- bright red, round
- warriors
- fights disease
- blood's workforce