Unit 06: Transport

Content Area: **Science**
Course(s): **Anatomy/Physiology**
Time Period: **May**
Length: **15 periods**
Status: **Published**

Unit Overview

- Blood is often considered a type of connective tissue whose cells are suspended in a liquid intercellular material. It transports substances between body cells and the external environment and helps maintain a stable internal environment. The cardiovascular system provides oxygen and nutrients to tissues and removes wastes.

Enduring Understandings

- A functional cardiovascular system is vital for survival, because without blood circulation, the tissues lack oxygen and nutrients, and waste accumulates.
- Different blood cells have different responsibilities in the body.
- Inflammation is a response to injury where white blood cells rush to the affected area.
- There is a vast number of white blood cells, with each having a vital role in defending the organism.

Essential Questions

- How does the heart work within the cardiovascular system and the body as a whole?
- How does the physical, chemical, and biological properties of the cardiovascular system relate to transportation, absorption, and excretion?
- What are the primary structures and functions of the cardiovascular system?
- What is the composition of blood and how does it allow for transportation of heat, nutrients, and other substances throughout the body?

Lesson Titles/Objectives

- Blood and blood cells (2 periods)
- Blood groups and transfusions (1 period)
- Lab-Blood cells (2 periods)
- Lab-Blood vessels (2 periods)
- Lab-Structure of the heart (2 periods)
- Life span changes/diseases/disorders
- Structure of the heart (2 periods)
- Structure of the heart (2 periods)

Standards/Indicators/Student Learning Objectives (SLOs):

- Describe life-span changes in the cardiovascular system
- Describe the general characteristics of blood and discuss its major functions
- Discuss the cardiac cycle and explain how it is controlled
- Discuss the life cycle of a red blood cell
- Explain blood typing and how it is used to avoid adverse reactions
- Explain how blood pressure is produced and controlled
- Explain the significance of red blood cell counts and how they are used to diagnose disease
- Name the organs of the cardiovascular system and discuss their functions
- Trace the pathway of the blood through the heart and the vessels of the coronary circulation

9-12.HS-LS1-1.LS1.A	Structure and Function
9-12.HS-LS1-1.LS1.A.1	Systems of specialized cells within organisms help them perform the essential functions of life.

Career Readiness, Life Literacies & Key Skills

WRK.K-12.P.4	Demonstrate creativity and innovation.
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.

Inter-Disciplinary Connections

LA.RH.11-12.4	Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
LA.RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
LA.RST.11-12.5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
LA.RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
LA.RST.11-12.8	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
LA.WHST.11-12.2.E	Provide a concluding paragraph or section that supports the argument presented.
LA.WHST.11-12.9	Draw evidence from informational texts to support analysis, reflection, and research.
HPE.2.1.12.C	Diseases and Health Conditions
HPE.2.1.12.C.1	Determine diseases and health conditions that may occur during one’s lifespan and

identify prevention and treatment strategies.

Instructional Strategies, Learning Activities, and Levels of Blooms/DOK

- Circulatory System Ed Puzzle
- Group Work
- Lab-Blood cells
- Lab-Blood vessels
- Lab-Structure of the hear
- Note Taking/Discussion
- Powerpoint
- Student Presentation
- You Tube

Modifications:

ELL Modifications:

- Be flexible with time frames and deadlines
- Focus on domain specific vocabulary and keywords
- Group students
- Provide ELL students with multiple literacy strategies

IEP & 504 Modifications:

- allowing student to take notes in class for reinforcement but also providing a copy of notes to study from
- modeling and showing lots of examples
- providing study guides

G&T Modifications:

- Student led/directed discussions
- Journal article analysis

At Risk Modifications:

- Additional help during tutoring/Delsea One/Academic Enrichment
- Non-verbal redirection of behaviors
- Study Guides

Alternate Assessments

Performance tasks

Project-based assignments

Problem-based assignments

Presentations

Reflective pieces

Concept maps

Case-based scenarios

Portfolios

Benchmark Assessment

Skills-based assessment

Reading response

Writing prompt

Lab practical

Formative Assessment

- Closure Activity
- Heart model
- Homework
- Lab Report
- Question of the day
- Teacher Observation of Student Activity
- Ticket out
- Turn to Partner

- Warm-Up Activity
- Worksheet

Summative Assessment

- Blood Quiz
- Circulatory System Test
- Marking Period 4 Test

Resources & Materials:

- Compound Microscope
- Google classroom
- Prepared Slides of Human Blood
- Textbook

Technology:

- Chromebook
- Ed Puzzle Circulatory SYstem
- Internet
- Microscope

TECH.8.1.12	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.12.A.CS1	Understand and use technology systems.
TECH.8.1.12.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.12.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.12.E.CS4	Process data and report results.