08. The Cardiovascular System: A Double-Looped Symphony

Content Area: **Science**
Course(s):
Time Period: **Semester 1**
Length: **2 weeks**
Status: **Published**

Standards

HS-LS1	From Molecules to Organisms: Structures and Processes
HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
HS-LS3	Heredity: Inheritance and Variation of Traits

Enduring Understandings

- The Cardiovascular System is a cooperative of components.
- Alteration, in any way, to the cardiovascular system can have profound implications for systemic health.
- The body is connected to the cardiovascular system.

Essential Questions

- How does the cardiovascular system follow the "systemic" plan?
- How does the heart function as a collaborative to deliver needed substances throughout the body?
- What are the systemic implications for a poorly functioning cardiovascular system?

Knowledge and Skills

NGSS Skills/Practices

- Asking Questions.
- Developing and Using Models.

- Analyzing and Interpreting Data.
- Constructing Explanations.
- Engaging in Argument from Evidence.
- Obtaining, Evaluating, and Communicating Information.

Knowledge:

- Describe the three major organs/structures of the cardiovascular system, and what are their important characteristics?
- Differentiate between the major vessels of the body: what are their names, where do they go, what do they carry, and what are the structural differences between them?
- Relate the role of the formed elements of the blood to the functioning of the system.
- Recognize that the human cardiovascular system is double-looped: why is this possible, and how does this relate to both efficiency and necessity?
- Detail the pathway of blood through the heart and through the body? How do these two different loops structurally and funtionally connect?
- What are the major layers of the heart, their composition, and relation to the Big Idea of Strunture: Function?
- What structures are in the electrical pathway of the heart, and what do they do?
- What is the pathway of electricity in the heart?
- How does the pathway of blood through the heart and body depend on the movement of electricity?
- What is an EKG graph, and what does it measure? How does an EKG wave act as "shorthand" for the entire cardiac cycle?
- From SA node to SA node, describe an entire cardiac cycle, including all electricity, structures, and blood movement.
- Abnormal EKGs - how do they compare to the Normal EKG, and what is happening? How is this treated?

Assessments

https://docs.google.com/document/d/1wR7bQF-8AQoRrt0g4C3hKja0yjwDjC9_BiAmONWbTcI/edit?usp=sharing

Modifications

https://docs.google.com/document/d/1ODqaPP69YkcFiyG72fIT8XsUIe3K1VSG7nxuc4CpCec/edit?usp=sharing