

Behind the Scenes – Planning for Heart Healthy PBL

Common Core Standards

Writing Standards for Literacy in Science and Technical Subjects – Grades 6-8

Research to Build and Present Knowledge

7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
9. Draw evidence from informational texts to support analysis reflection, and research.

Missouri Assessment Standards

Missouri Science Standards – Grade 8

Strand 3 – Characteristics and Interactions of Living Organisms

1. There is a fundamental unity underlying the diversity of all living organisms
 - A. Organisms have basic needs for survival
 - a. Recognize that most plants and animals require food and oxygen (needed to release the energy from that food)
 2. Living organisms carry out life processes in order to survive
 - B. Photosynthesis and cellular respiration are complementary processes necessary to the survival of most organisms on Earth. **(prior knowledge)**
 - b. Describe how oxygen is needed by all cells of most organisms for the release of energy from nutrient (sugar) molecules (Do NOT assess the term cellular respiration) **(prior knowledge)**
 - c. Describe the importance of transport and exchange of oxygen and carbon dioxide to the survival of the organism
 - C. Complex multi-cellular organisms have systems that interact to carry out life processes through physical and chemical means.
 - a. Identify and give examples of each level of organization (cell, tissue, organ, organ system) in multi-cellular organisms (plants, animals). **(prior knowledge)**
 - c. Explain the interactions between the circulatory and digestive systems as nutrients are processed by the digestive system, passed into the blood stream, and transported in and out of the cell.
 - e. Identify the importance of transport and exchange of nutrient and waste molecules to the survival of the cell and organism.
 - f. Explain the interactions between the circulatory and respiratory systems in exchanging oxygen and carbon dioxide between cells and the atmosphere (when oxygen enters the body, passes into the blood stream, and is transported into the cell: carbon dioxide is transported out of the cell passes into the blood stream and exits the body).

G. Life processes can be disrupted by disease (intrinsic failures of the organ systems or by infection due to other organisms

- a. Explain the cause and effect of diseases (e.g. AIDS, cancer, diabetes, hypertension) on the human body.

Next Generation Science Standards

MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (Clarification Statement: Emphasis is on the conceptual understanding that cells form tissues and tissues form organs specialized for particular body functions. Examples could include the interaction of subsystems within a system and the normal functioning of those systems.) (Assessment Boundary: Assessment does not include the mechanism of one body system independent of others. Assessment is limited to circulatory, excretory, digestive, respiratory, muscular, and nervous systems.)

Disciplinary Core Ideas

In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)

21st Century Skills

Productivity and accountability

Manage Projects

- Prioritize, plan and manage work to achieve the intended result

Produce Results

- Demonstrate additional attributes associated with producing high quality products including the abilities to:
 - Collaborate and cooperate effectively with teams
 - Respect and appreciate team diversity

Critical Thinking and Problem-solving

Solve Problems

- Solve different kinds of non-familiar problems in both conventional and innovative ways
- Identify and ask significant questions that clarify various points of view and lead to better solutions

Essential Question

How can we make a difference?

Unit Questions

1. How can we help our school become a place that promotes circulatory system health?
2. How can we persuade school leaders to make beneficial changes in our school?
3. How do the choices we make today affect our health later in life?
4. How does the circulatory system work with the other body systems to keep my body functioning?

Content Questions

1. What is the purpose of the circulatory system?
2. How does the circulatory system work?
3. What is the importance of blood to all body systems?
4. How does the circulatory system interact with the respiratory and digestive system to provide energy to cells?
5. How does diet, exercise, and smoking affect the health of the circulatory system?