



<b>Lesson Title</b>	The Heart
<b>Length of Lesson</b>	50 minutes
<b>Created By</b>	Claire Babineaux
<b>Subject</b>	General Science
<b>Grade Level</b>	8th
<b>State Standards</b>	3.b,e
<b>DOK Level</b>	2,3
<b>DOK Application</b>	2: classify, observations, construct 3: construct, compare, revise, critique
<b>National Standards</b>	C
<b>Graduate Research Element</b>	Blood (DNA) can be found in the rock record and can be useful in determining the age and location of various rocks in the rock and fossil record.

**Student Learning Goal:**

The learning goal for the students in this lesson is to understand what the heart is, where it is, the processes of the heart, and the connection to blood and circulation. The main focus of this lesson will be the defining terms and processes that are associated with the heart.

State Standards:

**3. Compare and contrast the structure and functions of the cell, levels of organization of living things, basis of heredity, and adaptations that explain variations in populations.**

b.) Compare and contrast the major components and functions of different types of cells. (DOK 2)

- Differences in plant and animal cells
- Structures (nucleus, cytoplasm, cell membrane, cell wall, mitochondrion, and nuclear membrane)
- Different types of cells and tissues (epithelial, nerve, bone, blood, muscle)

e) Explain energy flow in a specified ecosystem. (DOK 2)

- Populations, communities, and habitats
- Niches, ecosystems and biomes
- Producers, consumers and decomposers in an ecosystem

National Standards:

C: Life Science

- (Structure and Function in Living Systems) Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, organs, tissues, organ systems, whole organisms, and ecosystems.



- (Structure and Function in Living Systems) All organisms are composed of cells—the fundamental unit of life. Most organisms are single cells; other organisms, including humans, are multicellular.
- (Structure and Function in Living Systems) A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem. *This goes for the organs composing a 'population' within a human being.*
- (Structure and Function in Living Systems) the human organism has systems for digestion, respiration, reproduction, circulation, excretion, movement, control and coordination, and for protection.

**Materials Needed (supplies, hand-outs, resources):**

Foldable, PowerPoint Lesson, colored pencils, handout of notes

**Lesson Performance Task/Assessment:**

The task/assessment for the students will be a PowerPoint lesson on the circulatory system with a focus on the heart, a guided discussion on the processes that are associated with the heart, and directions for an activity to make a foldable. The students will be making a foldable of the heart to help them remember the parts, location and functions of the heart.

**Lesson Relevance to Performance Task and Students:**

Since all students are mammals of the homo sapiens variety, they all have the same circulatory system.

**Anticipatory Set/Capture Interest:**

In order to capture the interest of students, the teacher can show a video about the heart that shows the process about which blood travels through.

**Guided Practice:**

Depending on the stopping point of the lesson, whether this is a continuation of a lesson or the first day of the lesson, the teacher will lead the students in a discussion about the circulatory system and the following questions may be considered:

1. What is blood?
2. What is the main job for blood?
3. Describe circulation.
4. Order from largest to smallest—arteries, veins, capillaries?
5. Describe path of blood through heart?

After the discussion, the teacher will guide the students through the directions for the foldable and then allow them to complete the activity.



**Independent Practice:**

For independent practice, the students will complete a foldable of the heart in which on each page of the foldable a different part of the heart is highlighted. The students may use colored pencils to color the specified part of the heart.

For homework or lesson extension, the students will then write some notes on each part of the heart on the respective page in the foldable.

**Remediation and/or Enrichment:**

Remediation: Individual IEP will be followed. Additionally, the teacher may have the students work together in pairs.

Enrichment: The teacher may implement an extra credit assignment for the students to present their foldable to the class.

**Check(s) for Understanding:**

In order to check for a thorough understanding of the concepts presented in this lesson, the following questions can be considered:

1. What are some diseases associated with circulation?
2. What color is blood and why?
3. Describe the different parts of bloods and cells.

**Closure:**

The closure for this lesson can be a teacher led discussion on circulation and the study of blood at Mississippi State University, not only in the STEM areas provided by GK12 but also in biological sciences.

**Possible Alternate Subject Integrations:**

Biology: more in depth study of the circulatory system

Math: calculate rates

**Teacher Notes:**