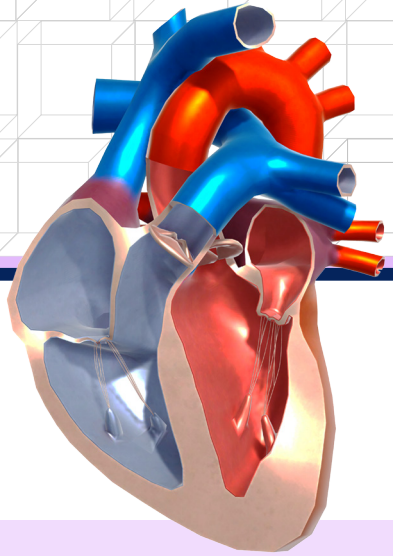
Mc Graw Hill AR



The Circulatory System

Overview

In this activity, students will learn how the circulatory system transports nutrients, gases, and other substances through the body.

Objectives

Upon completion of the activity, students will understand how each part of the circulatory system works in the body.

Standards

Next Generation Science Standards

MS-LS1-6: Structure and Function 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.

Duration of Activity

15-20 minutes

Materials

- Smartphone or tablet with the McGraw Hill AR Application installed
- Flat, non-patterned surface

Launch

Scanning The device needs a variety of perspective information to understand the space.

- Slowly move the camera throughout the space.
- View surfaces at an angle.
- Aim the camera at multiple points throughout the space.

Exploration

- Move the phone closer in to increase the size of the objects in AR.
- Move the phone around the objects to view them from different angles.

Environment Ideal spaces for AR should feature the following

- a flat open space;
- a surface with non-patterned visual texture and contrast;
- a matte or minimally reflective surface;
- a static environment, where nothing in the space is in motion; and
- a well-lit space, where detail is visible in the darkest and brightest parts of the space.

During the Activity

Teacher Tips

- Make sure students understand that they can rotate the figures during the Explore so they can view them at different angles.
- Point out that they can pick up and manipulate each part of the circulatory system to see what each looks like.
- Discuss the different parts of the circulatory system and how they transport substances through the body.

Evaluate

Students will be presented with five randomly selected exercises from the following set.

1. Which organ pumps blood throughout your body?

A. Heart
B. Artery
C. Vein
D. Right atrium

(A.) Heart

2. Which vessel carries blood away from the heart?

A. Heart
B. Left atrium
C. Artery
D. Right atrium

(C.) Artery

3. Which vessel carries blood toward the heart?

A. Left atrium

B. Right atrium

C. Artery

D. Vein

(D.) Vein

4. Which chamber of the heart is where oxygen-poor blood enters and is pumped to the right ventricle?

A. Left atrium

B. Right atrium

C. Right ventricle

D. Left ventricle

(B.) Right atrium

5 Which chamber of the heart is where oxygen-rich blood enters from the lungs and is pumped to the left ventricle?

A. Left atrium

B. Right atrium

C. Right ventricle

D. Left ventricle

(A.) Left atrium

6. Which chamber of the heart is where oxygen-poor blood leaves and is pumped to the lungs?

A. Right ventricle

B. Left ventricle

C. Left atrium

D. Right atrium

(A.) Right ventricle

7. Which chamber of the heart is where oxygen-rich blood leaves and is pumped to the body?

A. Left ventricle

B. Right ventricle

C. Left atrium

D. Righ atrium

(A.) Left ventricle

8. What does the circulatory system deliver to the cells?

A. Oxygen and nutrients

B. Carbon dioxide and wastes

C. Oxygen and wastes

D. Nutrients and carbon dioxide

(A.) Oxygen and nutrients

9. What does the circulatory system carry away from the cells?

A. Oxygen and wastes

B. Oxygen and nutrients

C. Carbon dioxide and wastes

D. Nutrients and carbon dioxide

(C.) Carbon dioxide and wastes

10. Your circulatory system is made up of the following:

A. Lungs, alveoli, and blood vessels

B. Heart, blood, and blood vessels

C. Bronchi, alveoli, and blood

D. Heart, alveoli, and lungs

(B.) Heart, blood, and blood vessels

After the Activity

Extension

These are more challenging exercises to extend the activity.

1. Explain how the circulatory system can be described as a highway system that runs through your body.

   (Student answers may vary but should mention that your body's highway system is the circulatory system. The highway sends blood to and from your body parts. The roads are your arteries and veins.)

2. What would happen if your circulatory system stopped working?

   (Student answers may vary but should mention that several important substances—including nutrients, gases, and wastes—would not be able to move through the body. Without blood constantly circulating through our bodies, we would not be able to function. Other body systems depend on the circulatory system to function as well, and they could be affected if the circulatory system was not functioning.)

3. Describe what the headquarters of the circulatory system is.

   (Student answers may vary but should mention that your heart is the headquarters of the circulatory system. Blood goes from the heart to the lungs to get oxygen. Your heart then pumps oxygenated blood through arteries to the rest of the body.)

Enrichment

Enrichment content beyond what is learned in the activity.

Circulatory Diseases

Circulatory system diseases affect your heart and blood vessels and make it harder for blood to flow throughout your body. Some conditions have symptoms, but others are silent. A problem with one part of your circulatory system can have a ripple effect on your entire system and, ultimately, your whole body.

Research common diseases and disorders that occur within the circulatory system. Create a brochure or presentation about a disease that people need to know about. Include the symptoms of the disease, what increases the risk of the disease, how the disease can be prevented, how the disease affects the circulatory system, and tips to stay healthy.

Here are some examples of diseases that can be researched:

- Atherosclerosis
- Hypertension
- Heart Attack
- Stroke
- Abdominal Aortic Aneurism
- Peripheral Artery Disease
- Asthma
- Pneumonia
- Chronic Obstructive Pulmonary Disease
- Pulmonary Embolism
- Interstitial Lung Disease
- Pulmonary Edema