

***Passports: Adventures in Learning
The Human Body Series: Circulatory and
Respiratory Systems
Curriculum Guide gr. K-2***

Description of our Tour:

Our heart and lungs are also known as the Cardiovascular and Pulmonary systems. Our heart pumps blood and oxygen through our body to keep it running. Our lungs provide oxygen to the blood so it can make the deliveries. How do these two systems work both dependently and independently of each other? What happens if one system slows down or needs repair?

Information for Trip Leader:

Lesson Outcomes:

The student will be introduced to the following concepts:

- The function of the circulatory system
- The function of the respiratory system
- Activities and resources for teachers and students on the circulatory and respiratory systems

Vocabulary

Inhale – taking a breath in

Exhale – letting your breath out.

Expand – lungs get bigger when you inhale

Contract – lungs get smaller when you exhale

Contract – the heart tightens to squeeze blood and move it through the body

Activity # 1: The Respiratory System

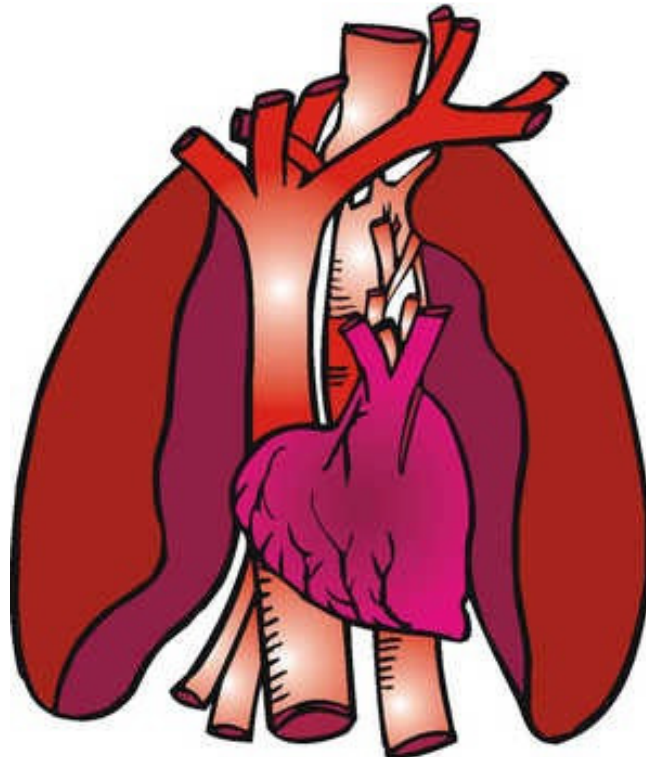
Students follow directions to explore the location and some of the parts of the respiratory system. Teachers guide the exploration through the question below.

Sit up tall. Inhale and exhale gently through your nose. What do you notice?

1. What do you feel expand or get bigger?
2. What does this tell you about the location of your lungs?
3. What part of your body is wrapped around your lungs? What is the purpose?
4. do you think your ribcage is flexible? Why or why not?
5. Do you think your nose plays a part in the respiratory system? If so what role?

Answers:

1. ribcage, chest, lungs
2. they are in our chest
3. ribcage, to protect the lungs and heart
4. yes, because it moves when we breathe
5. to take in oxygen



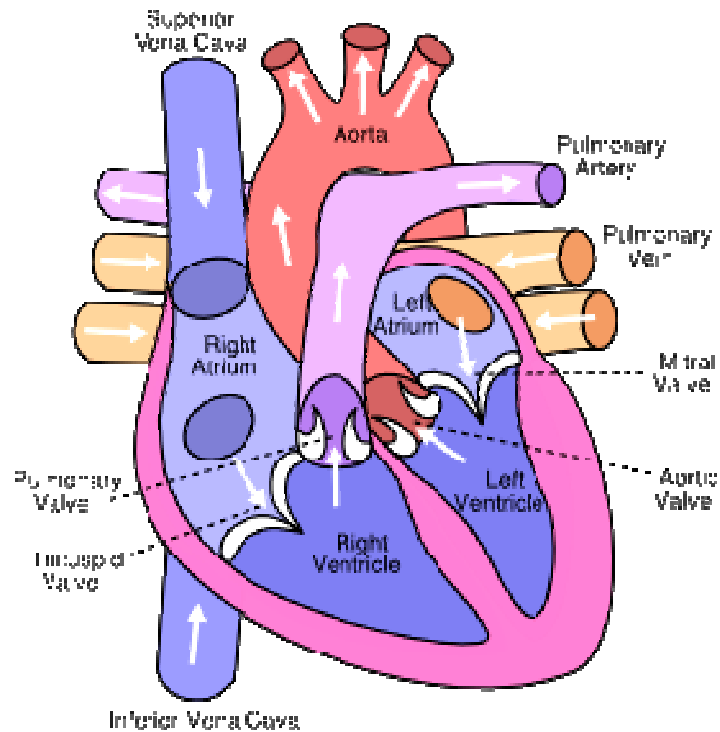
Activity # 2: The Heart

Listen as your teacher reads the paragraph below.

Your heart is the strongest muscle in your body. Your heart's job is to pump blood around your body. It pumps blood by contracting and relaxing muscles. Your heart has two sides. The left side pumps with oxygen from your lungs to the rest of your body. The right side pumps blood with no oxygen from your body to your lungs to get refilled with fresh oxygen. Your body's blood passes through your heart over 1,000 a day!

Questions

1. What is the function of the heart?
2. How does your heart pump blood?
3. How many sides does the heart have



Activity # 3: Tour of the Heart

Using tape make a large square (6' X 6') on the floor. Divide the square into four equal parts. Have each square represent the atria and ventricles of the heart. Label the squares. Tell students how blood passes through the heart (you can find a great description at <http://www.pbs.org/wgbh/nova/heart/heartmap.html>). Have students walk through the squares as if they are blood returning from the lungs going to the rest of the body.

Challenge Questions:

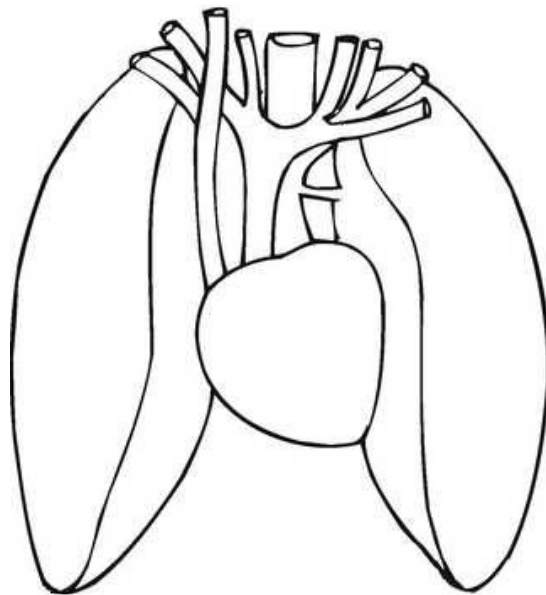
- 1. What is the function of the heart?*
- 2. What is the function of the lungs?*
- 3. Why do we say the heart is the strongest muscle in our body?*
- 4. What does our ribcage do to help our heart and lungs?*

Responses:

1. pump blood through the body.
2. move gases in and out of the body.
3. It beats constantly and steady.
4. protects them.

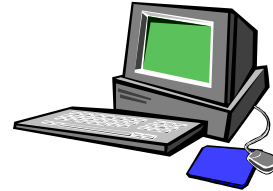
Activity #4 Your heart and lungs

1. color your heart red
2. color your lungs blue
3. Draw your body and head around this heart and lungs to show where they are located on your body.



Writing Prompts/Discussion Topics:

- The heart is amazing because...
- My blood is important because...
- How do I feel after I run or do strenuous exercise?
- What make me feel short of breath?



Web Resources:

<http://yucky.discovery.com/flash/body/pg000131.html>

Fun information and facts about the circulatory system for elementary students

<http://www.stemnet.nf.ca/CITE/muscular.htm>

Information and activities on the human body systems for elementary students

<http://www.medtropolis.com/VBody.asp>

MEDtropolis site allows students from the upper elementary grades to: listen to a narration about what the heart does, see a virtual heart beating and take a narrated tour of a beating heart.

<http://www.kidport.com/Grade5/Science/Heart.htm>

Information and virtual activities about the circulatory system

Suggested Reading:

The Internal Adventures of Marcus Snarkis: Ray Nelson, Jr., Douglas Kelly, Ben Adams, Julie Hansen

The Incredible Human Body: Esther Weiner

The Human Body (Scienceworks for kids): Elissa Dosik Weinroth, Alexander Cruz, Jo Larsen, and Nancy Schoefl