

GRADE 1: LESSON PLAN 1

ANATOMY: WHERE IS YOUR HEART? WHAT DOES IT DO?

Goals

Students will be able to describe the location of the heart and its general function.

Instructional objectives

Students will be able to

1. Identify the size and general location of the heart.
2. Identify the heart as a muscle.
3. Describe, in general terms, the heart's basic function, which is to pump blood through the body.

Background information

The heart is a muscle that pumps (or pushes) blood through the body. Located just to the left of the middle of your chest, your heart is about the size of your own fist.

Materials

1. Illustration: "Inside Me" (Activity 1-A)
2. Poem: "My Special Pump" (Activity 1-B)
3. Worksheet: "Where Is Your Heart?" (Activity 1-C)
4. Crayons or markers
5. Stethoscope or model made from tubing and top section of a 2-liter bottle or a funnel
6. Model of basic pump (bicycle pump, balloon, plastic liquid-soap bottle, etc.)
7. Classroom computer with Internet access

Introduction

Tell students that you have a riddle for them to answer: What is something that we all have, is the size of your fist, and makes a lub-dub sound? After students guess correctly that you are describing the heart, encourage them to share with the class any other information that they know about the heart. Write some key words on the board or chart paper to record their ideas. Put the title "What We Know About Our Hearts" at the top of the chart. Tell students that they will be learning more about the heart: where it is located, its size, and what it looks like. They will learn things that they can do to have a healthy and strong heart.

Lesson procedures/activities

1. Ask students if they know where their heart is located. Ask them to show you where they place their hand when they say the "Pledge of Allegiance" each day. Remind them that their heart is about the size of their fist. Have them make a fist and place it on their chests, over their hearts. Present the illustration "Inside Me" (Activity 1-A) on a transparency or enlarged poster, so that students can see the location of the heart inside their bodies.
2. Introduce the poem titled "My Special Pump" (Activity 1-B). Students may wish to recite it as a rap song. Challenge the class to make up actions that will help them remember the song.
3. Ask the class if anyone noticed that "My Special Pump" refers to the heart as a muscle. Tell them it is a different kind of muscle than those in our arms and legs. Have them extend one of their arms by their side and feel the muscle (the biceps)

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at the top of the arm with the other hand. Ask them to notice how it feels. Next, ask them to flex their biceps muscle and feel the difference. Ask them to feel the difference in the muscle. They will probably say it is bigger or harder. Explain how they had to think to move their arm up and flex that kind of muscle. The muscle in their arm is a skeletal muscle. Tell them the heart muscle is different; it keeps working without us having to do anything. The heart muscle is a smooth muscle that flexes and relaxes on its own, even while we are sleeping.

4. Ask the students what they think causes the “lub-dub” sound the heart makes. Ask them if they know the name of the instrument the doctor or nurse uses to listen to the heartbeat. (If possible, borrow a stethoscope from the school nurse, so the students will have an opportunity to listen to their own heartbeat. If a stethoscope is not available, a model of one can be made by cutting off the top section off of a 2-liter bottle or by using a medium-to large-sized funnel and attaching rubber tubing to the mouth of the bottle top or end of the funnel. For sanitary purposes, if you use a long enough piece of tubing, you can snip off a piece at the end each time it is used. A cardboard paper-towel tube could be used, but it is not as effective for hearing the heart, especially in a typical classroom environment.) After students have the experience of hearing a heartbeat, show them how they can feel their heartbeat by placing their first two fingers on the inside of their wrist or front of their neck. You will probably need to assist students in placing their fingers on the best location to find their pulse.
5. Tell students that the sound of our heart beating tells us our heart is pumping blood through our body. Ask them to hold out their fist again, but this time, ask them to squeeze and relax their fist again and again. Explain that this how a pump works and that our heart muscle works like a pump.

Using a bicycle pump, a balloon partially filled with water and securely tied, a kitchen basting utensil, or a liquid-soap bottle, allow students to experiment with pumping actions. Explain to students that our hearts push (or pump) blood throughout our bodies. The blood carries good things to our bodies’ cells (like oxygen from the air we breathe and nutrients from the food we eat) and takes

away the bad things we don’t need. Refer to the “Inside Me” illustration to show students where their lungs are. Have them breathe in deeply and breathe out again.

Point out that the lungs are breathing in air that we need and breathing out air that has been used.

6. Ask students to hold out their arm and make a fist again. This time, explain that you want them to continue flexing their fist until you tell them to stop. When students appear to tire, tell them they may stop. Ask them how their hand feels. Most will say it is tired or it hurts. Remind them that our heart muscle works all of the time, without us doing anything or thinking about it. Healthy hearts do a good job pumping blood to our bodies, but an unhealthy heart can have a hard time doing its job.
7. Divide students into groups and have them rotate through the centers. Provide detailed directions for each center.
 - **Centers 1 and 2: Pumping Stations:** Use dishpans (to catch water), rubber tubing, a funnel, and water. Students can experiment with the flow of water (representing the blood) through the tubes (representing the arteries and veins). Provide craft syringes, basting utensils, plastic soap bottles, and smaller tubing for experimenting. Make permanent obstructions in some of the tubing so that students can begin to understand what happens when the heart tries to pump blood through blocked blood vessels.
 - **Centers 3 and 4: Computer Stations:** Allow small groups of students to view animated illustrations of the heart and the flow of blood. See the Texas Heart Institute website (texasheart.org) for animated graphics of the heart. Allow students to discuss what they observe.

Guided practice

Using the illustration “Inside Me” (Activity 1–A), have students identify the heart and color it red, identify the lungs and color them green, and identify the blood vessels (arteries and veins) and color them blue. With a partner at their table, have them discuss how the heart works.

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Independent practice

Have students draw the heart and lungs in the correct location on an illustration of the human body (“Where Is Your Heart?”; Activity 1–C). Have them write a description of what the heart and lungs do. Challenge them to show the arteries that carry blood to the rest of the body.

Extension activity

Allow students to explore Internet sites that describe how the lungs and heart work together to supply oxygen-rich blood to the body and how the inner parts of the heart work. (Example website: www.howstuffworks.com)

Assessment

Using an observation checklist during guided and independent practice activities and during whole class response, you should be able to assess students’ understanding of the objectives:

	Tom	Sara	Steven	Lara	Paul
Described the size and location of the heart	X	X	X	X	X
Drew the heart in the correct location on an illustration of the human body	X		X	X	
Indicated the heart is a muscle that pumps blood through the body	X	X	X	X	X

Closure

Refer back to the chart, “What We Know About Our Hearts,” that you made with the class at the beginning of the lesson. Review some of the ideas that students had about the heart.

Ask them if they want to make any changes or add new ideas to their class list. End the lesson with volunteers leading the class in singing or reciting “My Special Pump.”