

UNIT 8 - BLOOD / LYMPHATIC / CARDIOVASCULAR SYSTEMS

ACTIVITY - See, Hear and Feel that Beat

Objectives:

The purpose of this activity is to demonstrate the functions of the heart through observation. This activity can be done individually, as a group or as a demonstration by the teacher.

Materials:

Heart Model

one-half pear
per student
surgical tubing
plastic spoons
scalpels
heart terminology
toothpicks and paper flags

Vibration Observation

modeling clay
paper match or light toothpick

Model Stethoscope

surgical tubing
2 funnels per model
stethoscope

Strategy:

Create a Heart Model

1. Students turn pear upside down and carefully remove seeds with the spoon.
2. Have each student cut out two hollow openings at the top of the pear and two larger ones directly under them to represent the four chambers of the heart.
3. Introduce the largest artery (aorta) and the largest vein (vena cava) by inserting surgical tubing in the correct positions.
4. Using tooth pick flags have the student label the structures associated with the heart.

Vibration Observation

1. Insert the match into a very small piece of clay (the smaller the better).
2. Flatten the bottom of the clay.
3. Place your wrist, palm side up, on a table.
4. Place the clay on your wrist, and move the clay around on the thumb side of the wrist until the match starts to slowly vibrate back and forth.
5. Count the number of vibrations that the match makes in one minute.

Stethoscope Models

1. Have students work in pairs.
2. Cut the hoses for the stethoscopes into approximately 3 feet lengths.
3. Set out all the material on supply table.
4. Prepare a sample stethoscope. Slide the hose over the end of each funnel. Use clay to hold funnel in place.
5. Instruct students to be quiet because it will be very hard to hear the sound of a heartbeat if there is a lot of background noise and talking.

6. Have one student place one end of the funnel on their ear while the second student places the other funnel near the left side of the chest.
7. Have students listen to the heartbeats of themselves and partners using stethoscopes and compare rates.
8. Calculate the number of times your heart beats in one hour.

Assessment:

Students will be able to answer the following questions:

Heart Model:

1. How many chambers are in the heart?
2. What are the names of the chambers?
3. What are the functions of the chambers?
4. What is the name of the protective covering of the heart?
5. What is the name of the largest artery?
6. What is the name of the largest vein?

Vibration Observation:

How many times does the match or toothpick vibrates back and forth with a regular heartbeat?

(For adults it will vibrate 60 to 80 times in one minute.

The vibration for children is from 80 to 140 beats per minute.)

Stethoscope:

1. Did you hear the "lubdub" sounds of the valves snapping shut with each heartbeat?
2. How do you think the stethoscope works?

Conclusions:

Students will understand the functions of the heart and that blood being forced through the vessels causes the pulse rate. The movement of the blood under the clay causes the skin and the match or toothpick to vibrate. The students will also understand the use of the stethoscope and that a stethoscope can be made from simple house hold items.