Bill Nye the Science Guy:

Heart

Running Time: 26 Minutes

Nifty questions in this episode:

- Which muscle is always working, all the time?
- How big is your heart?
- What job does the heart have in your body?
- What color is blood with lots of oxygen?

Awesome answers:

- The heart.
- About the size of your closed fist.
- To keep the blood moving in your veins and arteries.
- Red. Blue blood shows lack of oxygen.

Experiments shown on the video:

PUT YOUR HANDS UP!

Objective: To demonstrate how the flow of blood is affected by gravity.

- Hold one hand high in the air and keep one hand down along your side.
- Which hand is more red and which one has little color? Why?

More interesting stuff to do:

IN THE THICK OF IT!

Objective: To demonstrate how the blood flow in arteries can be affected by restricted arteries.

- Prepare two 24-inch (or longer) lengths of clear, flexible, 3/8-inch water line (polyplastic). Plug one end of one of the lines with a stopper (clay, cork, cotton, etc.).
- Melt 1/4 pound of butter (or enough butter to fill the plugged plastic line 3/4 full).
- Hold the line upright and use a turkey baster or suction bulb to draw the butter from the pan and fill the plastic line 3/4 full (make sure that the butter is WARM, not HOT). Plug the other opening with a stopper.
- With both ends plugged, lay the line on a flat surface, bend it into an "L" shape, and let the butter in the line cool and become hard. Take out the plugs at both ends.
- Lay the other clear plastic line with nothing in it next to the butter-clogged plastic line in the same "L" shape and pump 1/2 cup of water with red food coloring through each line, using an aquarium, hand, or bulb pump. Have the lines empty into two separate measuring cups and record the number of seconds it takes to empty each 1/2 cup of water. Record your observations: which line flows the easiest and fastest and why?

IT TAKES HEART!

Objective: To determine the difference in your heartbeat during different activities and exercise.

- Place your index finger along the right side of your neck just under your jawbone until you feel your pulse (heart beating). Count the number of beats per minute while resting and sitting down and record this number.
- Then perform activities and take your pulse rate after each activity and record. Try walking up steps, lifting books over your head 10 times, jumping and running in place, or any activity of your choice.
- Determine which activity involves more effort and why! Stop any activity when you get tired.

Way Cool Scientist: Salim Aziz, M.D.

closed-captioned

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