

Project Heart

Activities for the Classroom

EXPERIMENT

ONE-WAY BLOOD HIGHWAY

Introduction

Your heart is a fist-sized organ designed to pump blood and nutrients throughout your body. The heart uses a system of valves to keep blood flowing from one chamber to the next. When a chamber contracts, the valve opens as the blood exits. The valve quickly closes to prevent blood from flowing backwards. Using a tennis ball and water, you can make an easy model of how heart valves work.

Materials

1. Tennis ball
2. Sharp knife
3. Funnel
4. Cup of water
5. A parent or guardian

Directions

1. Ask a parent or guardian to carefully cut an “X” at the top of the tennis ball using a sharp knife. This “X” will be the heart valve.
2. Insert the funnel into the top of the tennis ball, and pour water into the funnel.
3. Once the ball is full of water, remove the funnel making sure the “X” springs back to its original position.

4. Lightly squeeze and release the ball to mimic the contraction of a heart chamber. Notice that the “X” (valve) opens to release the water (blood) and closes again to prevent the water (blood) from flowing back in.

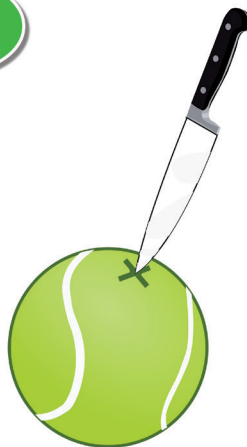
Deep Exploration

1. Some people have a condition called mitral valve regurgitation. The mitral valve doesn’t close tightly and allows blood to leak backwards into the heart’s upper chamber instead of moving forward to the lower chamber. How do you think this affects the amount of oxygen that is able to get to the rest of the body?

Materials



Step 1



Step 2

