



MAKING A MODEL OF THE HUMAN CARDIOVASCULAR SYSTEM

Name: _____

Date: _____

Age/Grade: _____

The cardiovascular system includes the heart and blood vessels. It works like a network of tubes that pumps and carries blood throughout the body, delivering oxygen and nutrients and removing waste.



OBJECTIVE

To build a working model that shows how the heart pumps blood through blood vessels to the rest of the body and back to the heart.



MATERIALS

- 2 clear plastic bottles (500 mL or 16–20 oz)
- 1 large syringe (50–60 mL) or hand pump
- 3–4 feet of clear plastic tubing (1/4 inch diameter works well)
- Modeling clay or tape
- 2 Y-connectors (or T-connectors)
- Scissors
- Red food coloring
- Funnel (optional)
- Water
- Marker (optional)



BUILD YOUR MODEL

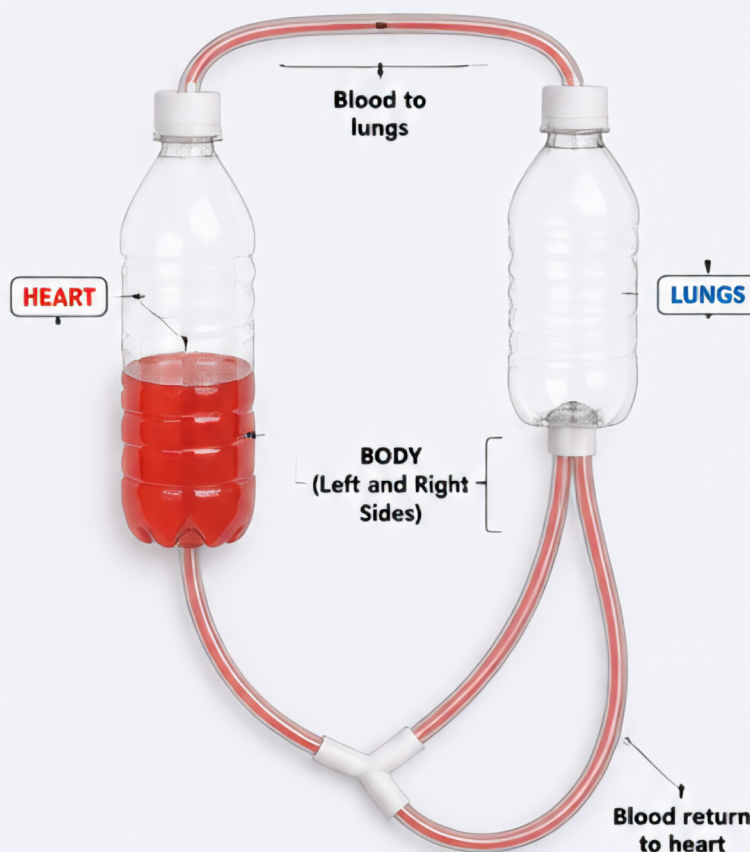
- 1 Prepare the "Heart": Fill one plastic bottle about 1/3 full with water. Add several drops of red food coloring and stir.
- 2 This bottle is the HEART. It will pump "blood" (colored water) through the system.
- 3 Prepare the "Lungs": Leave the second bottle empty. This represents the LUNGS.
- 4 Connect the Bottles:
 - Use tubing and connectors to create a closed loop.
 - Connect the "heart" bottle to the "lungs" bottle.
 - From the "lungs" bottle, connect tubing that splits with a Y-connector into two branches (the "body").
- 5 From the two branches, connect the tubing back together with a Y-connector and return it to the "heart" bottle.
- 6 Use clay or tape to seal all connections so there are no leaks.
- 7 Pump the System: Use the syringe or hand pump to push down on the "heart" bottle. Watch the red water travel through the loop and back again!



WHAT HAPPENED?

Write 2–3 sentences describing what you observed when you pumped the system.

YOUR MODEL SHOULD LOOK LIKE THIS:



THINK & REFLECT

1. What part of your model represents the heart?

2. What part represents the lungs?

3. What parts represent the rest of the body?

4. How does the real cardiovascular system work like your model?

5. How is it different from your model?



DID YOU KNOW? Your heart pumps about 2,000 gallons (7,500 liters) of blood through your body every day!