

Put Your Heart Into *IT!*

What Is *IT!*

How does a heart valve support the directional flow of blood?

Understanding the phenomenon: The heart is a muscular organ that pumps blood throughout your body. The heart is part of the circulatory system, made up of the heart, blood, and blood vessels. The human heart is a muscle that is comprised of four chambers that contract and relax to pump the blood through the connecting vessels. The blood, however, moves in a single direction with the help of heart valves.

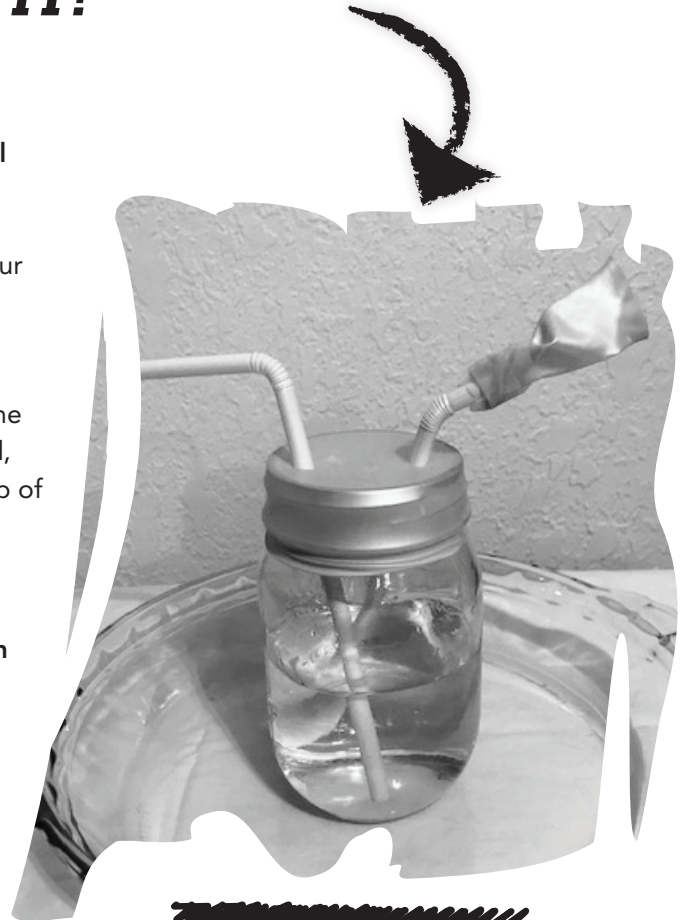
Think About *IT!*

Why does blood move in one direction through the heart? Blood circulates through all four chambers of the heart. Heart valves help the circulation process by ensuring that blood moves in one direction to all parts of the body. The pressure from the movement of the blood helps with the opening and closing of the valves.

Extend *IT!*

What questions do you have? Think of the possible variables that could be manipulated to get different results.

- What happens when you remove the balloon valve?
- How would changing the diameter of the straw affect the results in the amount of blood flow?
- What if the straw became damaged (i.e. bent, creased)? How might that affect the flow?



Materials List:

- Jar or Beaker
- Balloons
- Straws
- Wooden Skewer
- Scissors
- Water
- Tape
- Large Pan or Dish

Dare to Change *IT!*

How can your understanding of a pumping heart help make a difference in your school and community?

Scenario: A local medical group would like to campaign to your school and community the importance of a healthy heart. Part of their campaign involves demonstrating how a healthy heart works. They need a team of engineers to build a model of a pumping heart that illustrates the action of the circulating blood in the heart. The team that builds the best model will be selected to go on tour to local schools and community centers to present their findings.

Challenge: Determine the best design to model a healthy heart. Create a presentation that displays your evidence and provides suggestions to support heart health.

Suggested Resources and Articles:

<https://www.everydayhealth.com/heart-health/how-your-heart-works.aspx>

Movie: Heart and Circulatory System presented by KidsHealth.org

American Heart Association: We Jump, We shoot, We Save

Women and Children's Health Network

Savvas.com/ExperienceIT

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