
Stent Design

Purpose:

This activity looks at using everyday materials to design and develop stents to unclog blood vessels. Students learn about the circulatory system and biomedical engineering.

Materials:

- Paper (preferably graph paper)
- Cutting board
- X-acto knife
- Tape
- Balloon
- Balloon Pump

Steps:

1. Take the paper and make a 4 x 4 square.
2. Using the x-acto knife cut slits into the paper creating various “patterns” (see example template)
3. Take the cut paper and roll into a cylinder and tape the ends together.
4. Take a balloon and place it inside the stent.
5. Expand the balloon, demonstrating how the stent expands and which patterns are better.

Discussion Points:

1. What challenges might an engineer face when creating a similar technology?
2. What patterns work best?