STEM CAREER ADVENTURES

Cardiologist: Measuring Blood Flow

Adventure Description:

In this adventure, you will think like a cardiologist and create a model that will measure the rate of blood flow through two arteries.

Activity

Step 1: Background Information about Cardiologists (10 minutes)

- Ask students which organ they think is the most important to the body. (Students may say the heart or lungs, or brain.)
- Remind students that the body is a system that needs lots of organs to work properly because they all do different jobs.
- While organs all do different jobs, they all require the same thing to work properly - blood!
- Ask students what organ is responsible for pumping blood. (The heart)
- Explain to students that the heart uses a system of veins and arteries to carry blood all over the body.
- However, sometimes veins and arteries get clogged and blood can't pass though.
- Show Handout: When Blood Vessels get Clogged and read through as a class.
- Explain to students that cardiologists are doctors that specialize in studying the heart.
- When a cardiologist is checking the heart health of a patient, they measure how easily blood can pass through a patient's veins and arteries.
- Explain to students that today, they will think like a cardiologist and test two different arteries to see how quickly and easily blood can pass through them.

Step 2: Activity set up (10 minutes)

- Explain to students that they will be creating a model of a heart with its arteries. Place students in groups.
- Give students Handout: Model of a Heart and explain to students that they will make a model of a heart using simple supplies. Review which supplies will be used for which parts of the heart and arteries.
- Give students Handout: Testing Blood Flow Through Arteries and read through the steps.
- Provide groups with the following materials:
  - 2 plastic cups
  - Clay
  - 2 straws of different diameters (We suggest a regular drinking straw and a coffee straw.)
  - Scissors

Please contact Allison Bischoff, Director of Teacher Support, at allison@rozzylearningcompany.com or 314-272-2560 with questions.

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  - 1 small dixie cup or similar
- Have students complete step 1 on the handout.

Step 3: Testing Blood Flow (20 minutes)

- Check students' heart construction.
- Have students complete step 2 on the handout.
- Give students a large aluminum or plastic tray to use to complete their test inside of.
- When students are ready, pour water into their hearts. Try adding red food coloring to make it more like blood.
- Be sure to fill the heart above the straw artery.

Step 4: Discussion (10 minutes)

- Ask students to share the results of their experiment.
- Ask students which artery they think is healthier and why. (The larger artery, because more blood can easily move through the artery.)
- Have a concluding discussion about the importance of cardiologist and heart health.

Materials List

Provided online:

- Handout: When Blood Vessels get Clogged
- Handout: Model of a Heart
- Handout: Testing Blood Flow Through Arteries

Not provided (each student or group needs):

- 2 plastic cups
- Clay
- 2 straws of different diameters (We suggest a regular drinking straw and a coffee straw.)
- Scissors
- 1 small dixie cup or similar
- Water
- Plastic or aluminum tray
- Red food coloring (optional)

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