

Math Lab: Comparing the Volume of a Cylinder and a Sphere

Print these instructions so you can record your answers. Keep this in your course folder (binder) to refer to later.

Purpose

In this investigation you will compare the volume of two 3-D objects.

Materials

- tennis ball (e.g., a sphere)
- empty concentrate juice container or tennis ball container (e.g., a cylinder)
- water
- measuring cup or graduated cylinder
- scissors
- ruler
- marker or grease pencil

Procedure

Step 1: Place the tennis ball inside the empty juice container. Determine the position of the top of the tennis ball while resting inside the juice container. Mark this position on the outside of the juice container.

Step 2: Remove the tennis ball from the container. Use the scissors to cut the juice container to make its height consistent with the position of the top of the tennis ball.

Step 3: Use the measuring cup or graduated cylinder to completely fill the empty container with water. Record the volume of water that is used.

Volume of Water:

Step 4: Remove the water from the container. Place the tennis ball into the empty container. Repeat step 3 to measure the volume of water required to completely fill the container. **Note:** Ensure that the tennis ball does not float while you are adding water.

Analysis

Compare the volume of the sphere to the volume of the cylinder by preparing a ratio. Represent this ratio as a decimal and as a fraction.

Once you have completed Math Lab: Comparing the Volume of a Cylinder and of a Sphere, keep it handy so you can compare your answer later in the lesson.