



Name: _____

Date: _____

Student Exploration: Measuring Volume Part B

Vocabulary: cubic centimeter, diameter, graduated cylinder, meniscus, milliliter, pipette, radius, rectangular prism, sphere, volume, water displacement

Activity B: Regular solids

Get the Gizmo ready:

- Select the **Free Exploration** mode.
- Return all items to the cabinet.
- Drag the **block** and the **ruler** to the counter.
- You will need a calculator for this activity.



Introduction: The volumes of regular solids, such as spheres (balls) and **rectangular prisms** (blocks), can be determined by measuring their dimensions. The volume of a solid is usually expressed in **cubic centimeters** (cm^3). One cubic centimeter is exactly the same volume as 1 milliliter.

Goal: Measure and calculate the volume of a rectangular prism and a sphere.

1. **Observe:** Count the squares in the rectangle at right to find its area.

A. What is the area of the rectangle? **8cm^2**



B. How does the area of the rectangle relate to the lengths of each side? **The more you add to each side the greater the area will be.**

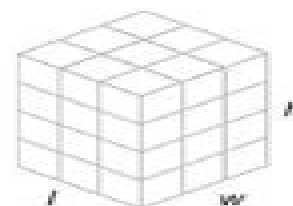
2. **Observe:** A block is an example of a rectangular prism. A rectangular prism has six rectangular faces. Look at the block shown below. Each cube inside the block has a 1-cm side and a volume of 1 cm^3 , or 1 mL.

A. What are the length, width, and height of the block?

Length: **3cm** Width: **3cm** Height: **4cm**

B. Multiply these three dimensions. What is the product of the length, width, and height? **36cm^3**

C. How many cubic centimeters are in the block? **36cm^3**



3. **Measure:** Just as the area of a rectangle is the product of its length and width, the volume of a rectangular prism is equal to the product of its length, width, and height. In the Gizmo, place the ruler over the block.

(Activity B continued on next page)



Photoelectric Effect Student Exploration Key

Sandeep Arya, Prerna Mahajan



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