

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Volume**

**Engage:**

How much water is in the graduated cylinder on your desk? How do you know?

**Explore:**

Fill-out the chart below as you follow these steps:

1. Be sure that your graduated cylinder measures exactly 40 mL. Remember to read the measurement from the bottom on the meniscus (curve) at eye level.
2. Place the stone on your desk into the graduated cylinder. Record the water level measurement.
3. Subtract the starting water level from the new water level. Water Level with Rock – Starting Water Level = ??

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Object** | **A. Starting Level** | **B. After Object** | **Subtract (B-A)** | **Difference** |
| Rock | 40mL | mL | mL | mL |
| Marble | 40mL |  |  |  |
| Bolt | 40mL |  |  |  |

1. Now, repeat steps 1-3 with the marble and the bolt.
2. **Concept Development**: What does this difference in the starting level of the water and the water level after adding the object tell you?
3. Is it necessary to always start at 40 mL. Explain why or why not?

**STOP HERE**: Teacher Notes

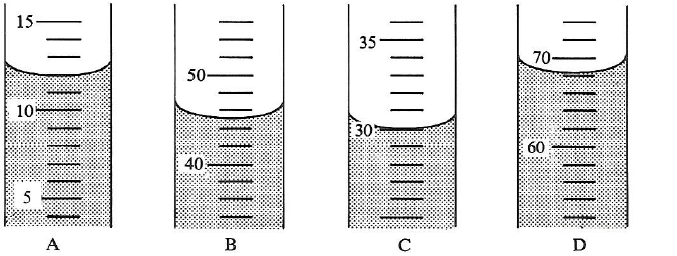
(Measuring Volume with a Graduated Cylinder Notes Page)

**Application:**

Now, let’s find the volume of a few objects that are too large for the graduated cylinder.

1. Fill the gray overflow can as full as you can without it overflowing out the spout.
2. Place a small beaker beside the can under the spout.
3. Place one of your larger objects in the overflow can; the beaker will catch any water that spills from the spout.
4. Dump the water in the beaker into your graduated cylinder. Record this amount of water in the chart on the back.
5. If any of your objects float, push them under the water level with a straightened paper clip.
6. Convert your over flow to cm3. A milliliter (mL) is the same as a cubic centimeter (cm3).

|  |  |  |
| --- | --- | --- |
| **Object** | **Volume of Overflow (mL)** | **Volume of Object (cm3)** |
| Matchbox Car |  |  |
| Egg |  |  |
| Ball |  |  |
| Your Choice: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |

1. **What does this amount of “overflow” water represent?**
2. **What is volume? Define this in a complete sentence.**
3. **Find the volume of liquid in each graduated cylinder below. Label your answers.** 
4. \_\_\_\_\_\_\_\_\_\_\_\_\_ B. \_\_\_\_\_\_\_\_\_\_\_\_\_ C. \_\_\_\_\_\_\_\_\_\_\_\_\_ D. \_\_\_\_\_\_\_\_\_\_\_\_\_