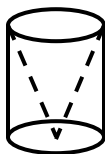


Lab FW 5.2 Comparing Cones, Spheres, and Cylinders



Name _____

Date _____ Period _____

Filling & Wrapping Unit



Materials: Rice or Water, Small Funnel or Measuring Cup, Plastic Cones, Spheres and Cylinders



Key Learning: Help students develop a **visual image** of the relationship between the **volume of a cone or a sphere** and the **volume of a cylinder**. Formulas are often used without understanding or justification. This experiment will allow students to judge the reasonability of the volume formulas for these shapes.



Guided Directions



this is a
GROUP
ACTIVITY

Using plastic spheres, cones, and cylinders (supplied by your favorite teacher), pour rice or water from one container to another. You may require a small funnel or measuring cup. Note the relationships between the different shapes.

Answer the questions below:

- 1) How many cones can fit in a sphere?
- 2) How many cones can fit in a cylinder?
- 3) If a cone, a cylinder and a sphere all have the SAME RADIUS AND HEIGHT, what is the ratio between the volumes of the three shapes?
Note: a 3-way ratio can be expressed as $a : b : c$, for example $2 : 4 : 7$



Lab FW 5.2
Comparing Cones, Spheres,
and Cylinders

The formula for the volume of a cone is: $\text{Volume}_{(\text{Cone})} = \frac{1}{3} \pi r^2 h$

Answer the following in your own words:

4) In the formula, what does the πr^2 represent?

5) In the formula, what does the h represent?

6) In the formula, what does the $\frac{1}{3}$ represent?