# **CONSERVATION OF VOLUME**

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## 1. MATERIALS NEEDED:

2 clear acetate sheets,  $8\frac{1}{2} \times 11$  inches rice

Clear tape (Scotch tape or equivalent) pan or tray

### 2. SAFETY PRECAUTIONS:

There are no safety hazards in the experiment.

### 3. DISPOSAL:

There are no disposal hazards in this experiment.

### 4. PROCEDURE:

Roll one acetate sheet into a cylinder 8½ inches high. Butt the ends and tape them.

Roll a second acetate sheet into a cylinder 11 inches high. Butt he ends and tape them.

Place the 11-inch cylinder on a tray. Fill the cylinder with rice (uncooked). Tap lightly to settle the rice.

Place the 8½-inch cylinder around the tall cylinder. Ask the class, What happens to the rice when the tall cylinder is removed?.

Remove the tall cylinder.

#### 5. EXPLANATION:

Calculate the volume of the two cylinders using the formula:

$$V = \pi r^2 h$$

where:

V = volume of cylinder

r = radius of the cylinder

h = height of the cylinder (either 8½ or 11 inches)

use the substitution:

 $r = c/2\pi$  (c = circumference of the cylinder, either 8½ or 11 inches)

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