**Lesson Title: Timing a Tube with Torricelli**

**Length: (60 minutes)**

**Standard(s) Addressed: 6.RP.A.3, 7.RP.A.3, 7.NS.A.3**

**Materials:**

1. Graduated cylinder
2. Water
3. Pitcher/bucket to catch the water.
4. Torricelli device
5. Stop watch

**Outline:**

1. Partner with someone.
2. Prime the Torricelli device by opening the valve and add some water to fill in the gap below the valve.
3. Close the valve.
4. Fill the device with 40 mL of water (amount depends on width of the pipe)
5. Open the valve. Time how long it takes to empty. Record the volume of water and time in a table.
6. Repeat the process for volumes of 80, 120, 160, 200, 240, 280, 320, 360, 400 mL.
7. Plot on a graph the results (x-axis is volume, y-axis is time).

**Questions:**

1. Does the relationship between volume and time appear to be linear? If not, what does the relationship appear to be?
2. Predict how long it would take for a volume of 500 mL to drain.
3. What volume of water would be needed to make a 1-minute timer?