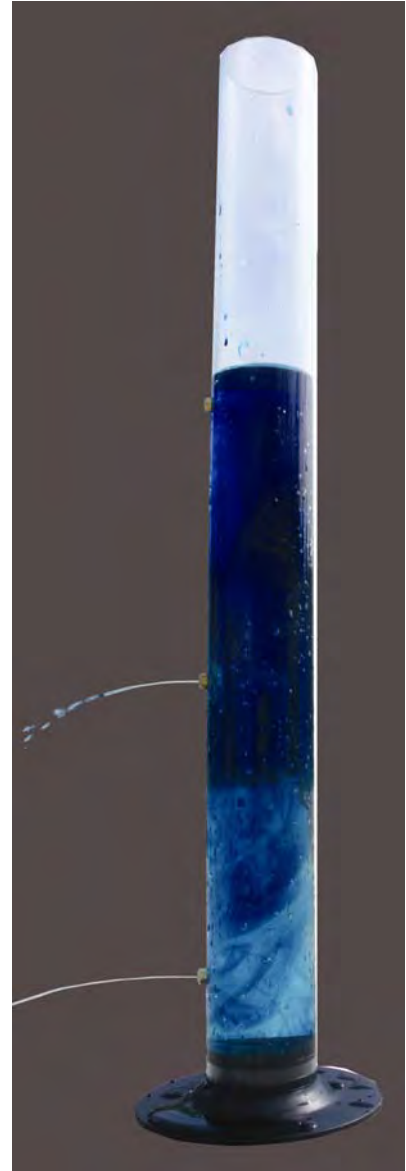


## 611-2380 (35-020) Perforated Jar

**Introduction:** Fluids behave strangely; after centuries of study, we do not fully understand them. They even change their behavior under their own weight. Our perforated jar demonstrates this in an amusing, intriguing fashion. When our clear polycarbonate tube, containing three brass nipples positioned one on top of each other, is filled with water, the water shoots out at different rates of speed. The water at the bottom will have the greatest weight of water above it, increasing the pressure and hence the rate of speed at which it spouts. The water pressure decreases proportionately for the two upper nipples; if low enough, water will not escape at all. Contains unbreakable polycarbonate tube on stand, three small brass nipples and instructions.

**Operation:** To use the perforated jar, simply fill it with water and observe the effects. You may want to use colored water for greater visibility. As the water settles into the column, it will become pressurized under its own weight. The pressure will be greatest at the bottom, which makes sense because the bottom nipple has the greatest weight of water above it. Water will rush out of the nipples according to the pressure.

As a side effect, shine a laser pointer through the jar into one of the streams of water. As the water stream curves, the laser beam will curve with it. This seems impossible until you consider internal reflection. The laser light will enter the water stream and reflect off the air/water interface. This causes it to be contained inside the water, and bend along with it. The laser beam is a series of straight lines, but the overall effect is a curve.



### **Warranty and Parts:**

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.