

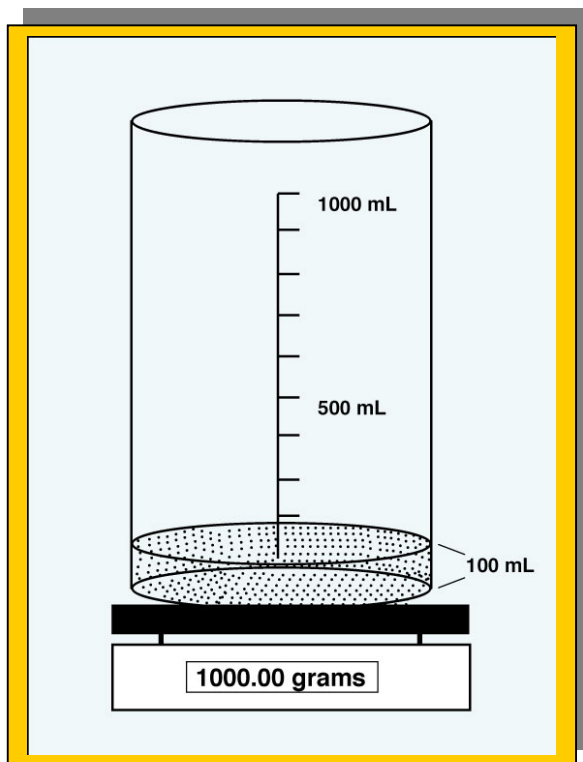
**Cosmic Chemistry: Cosmogony**

**Dark Matter—  
More Than Meets The Eye**

**STUDENT ACTIVITY: A MILKY WAY SURPRISE**

**The Situation**

A science instructor was preparing for a classroom demonstration. She placed an empty 1 liter beaker on a digital read-out balance and tared the balance to read 0.00 grams. Then she poured 100 mL of ordinary distilled water,  $H_2O$ , into the beaker. Imagine the instructor's surprise when the balance readout below the beaker indicated that the mass of the beaker's contents was 1000.00 grams, as shown below.



*Beaker containing 100 mL of water on a balance.*

After you have considered the situation, answer the following questions:

1. What possible explanations might there be for what the teacher observed?
  
2. What might we do to determine the cause of this phenomenon?
  
3. On what basis might we decide whether or not we have determined the correct reason for this phenomenon?