Name _____ Date _____

Hypotonic Vs. Hypertonic Solutions

Materials:

- **4 clear plastic cups**
- **pea gravel**
- **graduated cylinder**
- **Filtering device**
- **water**

Make a Hypothesis

Which cup holds more water, the cup with more gravel or less gravel?

_____

_____

Procedure

1. Cover one of the cups with the filtering device while you pour the water, from that cup into the empty plastic cup.
2. Use the graduated cylinder to measure how much water was in that cup and record your results below.
3. Repeat the same procedure with the other cup.
4. Add both cups of water together.
5. Use the graduated cylinder to measure out half of the total amount of water.
6. Add half the water to one cup and the remaining half to the other cup.

Amount of water in the first cup: _____ (A)

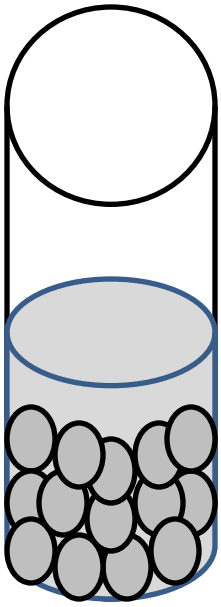
Amount of water in t he second cup” _____ (B)

Total amount o f water: (A + B): _____ (C)

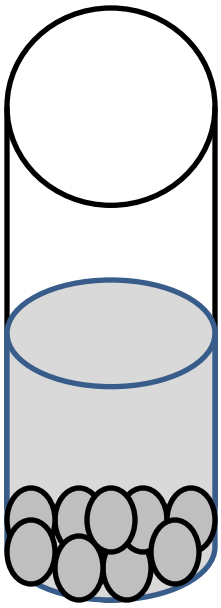
Half of the total water amount: (C / 2): _____

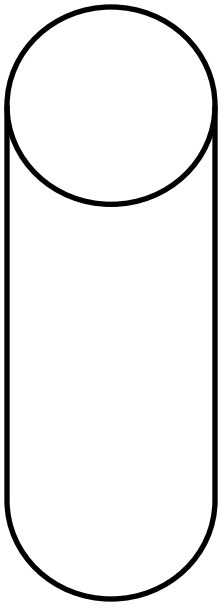
Results

1. In relation to another solution, a hypotonic solution has less solutes and more water. Label the before diagram, on the back page, that represents a hypotonic solution.
2. In relation to another solution, a hypertonic solutions has more solutes and less water. Label the before diagram , on the back page, that represents a hypertonic solution.
3. During osmosis, water will flow from an area of high water concentration to an area of lower water concentration until the water concentration becomes equal in each solution, known as equilibrium. Draw an arrow , between the before cups, to represent the direction water will flow.
4. Draw a line in each cup in the after diagram that represents the water level after osmosis.

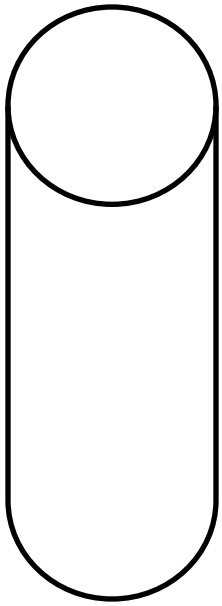


Before





After



Application:

1. Saltwater is hypertonic in relation to a cell. Based on your lab experience, would eater flow into or out of a cell that is placed in a salt water environment? _____
   _____

2. Freshwater is hypotonic in relation to a cell. Based on your lab experience, would water flow into or out of a cell that is placed in a fresh water environment? _____
   _____