Osmosis & Diffusion in an Egg Name_____

Objective:
In this investigation, you will use a fresh hen's egg to determine what happens during osmosis & diffusion across membranes.

Materials: (per lab group)
1 fresh hen egg in the shell, masking tape & marker, distilled water, clear sugar syrup, rulers, (Karo, for example), vinegar, clear jar with lid, electronic balance scale, paper towels

Procedure:
Day 1

Label the jar with your lab group names & the word "vinegar".
Mass the egg using grams with the electronic balance & record in the data table.
Measure your egg around the biggest section and record the circumference.
Handle your egg carefully. If you break your egg, you will lower your lab grade.
Measure the vinegar into the jar and carefully place the raw egg into the jar.
Check that the liquid covers the egg.
Loosely re-cap the jar & allow the jar to sit.
What do you think will happen?

Day 2

Open the jar & pour off the vinegar. Measure how much vinegar is poured off and discard in the sink.
Carefully remove the egg to a paper towel & pat it dry.
Record the size (circumference) & appearance of your egg in your data table.
Mass the egg using grams on an electronic balance & record.
Clean and re-label the jar with your lab group & the word "distilled water".
Carefully place the egg into the jar & cover the egg with distilled water. Measure how much water is poured into the jar and record.
Check that the liquid covers the egg.
Loosely re-cap the jar & allow it to sit.
What do you think will happen?

Day 3

Open the jar, measure & discard the distilled water in the sink. Measure how much water is poured off. Carefully remove the egg to a paper towel & pat it dry.
Record the size (circumference) & appearance of your egg in your data table.
Mass the egg using grams on an electronic balance & record.
Clean and re-label the jar with your lab group & the word "syrup".
Carefully place the egg into the jar & cover the egg with clear syrup. Measure syrup going into jar. Check that the liquid covers the egg.
Loosely re-cap the jar & allow it to sit.
What do you think will happen?

Day 4

Open the jar & pour off the syrup. Measure how much is poured off and discard in the sink.

Carefully remove the egg & rinse off the excess syrup under slow running water.
Pat the egg dry on a paper towel.
Record the size (circumference) & appearance of your egg in your data table.
Mass the egg using grams on an electronic balance & record.
Clean up your work area & put away all lab equipment.

Questions & Conclusion:

1. Vinegar is made of acetic acid & water. Explain how it was able to remove the calcium shell.

2. (a) What happened to the size of the egg after remaining in vinegar? Be specific.

(b) On the second day, was there more or less liquid left in the jar? How much more or less?

(c) Did vinegar move into or out of the egg? Why?

3. (a) What happened to the size of the egg after remaining in water? Be specific.

(b) On the third day, was there more or less liquid left in the jar? How much more or less?

(c) Did water move into or out of the egg? Why?

4. (a) What happened to the size of the egg after remaining in syrup? Be specific.

(b) On the fourth day, was there more or less liquid left in the jar? How much more or less?

(c) Did water move into or out of the egg? Why?

Date	Egg Circumference in mm	Egg Weight in grams	Liquid put into the jar in mL	Liquid Removed in mL	Observations
			vinegar	none removed	
			water	vinegar	
			corn syrup	water	
			none put in	corn syrup	