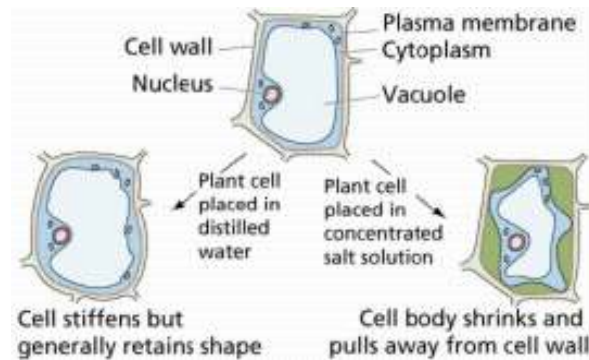
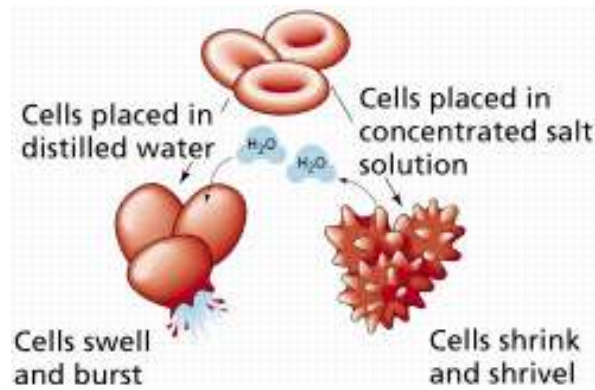


Egg Osmosis LAB



As you have learned from class, **osmosis** is:

The diffusion of water across a membrane (water moves from areas of low solute concentration to areas of high concentration).

Other terms you should have already are:

Isotonic: equal amounts of water flow in and out of the cell.

Hypotonic: cells in this type of solution gain water through osmosis.

Hypertonic: cells in this type of solution lose water through osmosis.

The drawings above illustrate how osmosis can affect living cells. These drawings are good (and you should study them!), but we are going to observe osmosis for ourselves.

To observe osmosis, first we need a large membrane so we can observe the effects easily. Ah ha! A chicken egg! Perfect. The water solutions we will use are vinegar and corn syrup. We will see how the water from these solutions moves across the membrane of an egg.

DIRECTIONS

****CAUTION****

You will be handling raw eggs. You should take care not to break them, and wash your hands thoroughly after handling them.

If you break your egg, you just lowered your lab grade by a full letter grade!

- 1) Work with the partner(s) assigned by your teacher.
- 2) This lab will span several days, so make sure you do only what you are supposed to do each day!

Day 1

- a. Get your supplies:
 - i. 1 egg
 - ii. 1 container
 - iii. 1 cup vinegar
 - iv. 1 piece of string
- b. Measure your egg around the largest section, and record the circumference in your data table.
- c. Weigh your egg and record the data in your data table (make sure you are recording the weight of the egg only).
- d. Pour 1 cup of vinegar into the container and then gently place the egg into the container.
- e. Record “**EGG IN VINEGAR OBSERVATIONS**” in the table provided. **Be specific and provide details (3 observations, minimum).**
- f. Complete the “**PREDICTIONS FOR NEXT OBSERVATION DAY**” section of your data table.
- g. Label your container, set it where indicated by your teacher. Clean up. You are done for today.

Day 2

- a. Get your jar, and record your “**EGG IN VINEGAR OBSERVATIONS**” (*6 observations, minimum*).
- b. *Gently* remove the egg; measure and record the circumference.
- c. Weigh your egg and record the data (make sure you are recording the weight of the egg only).
- d. Calculate the change in weight and circumference. Use this equation:

$$\text{Day 1 measurement} - \text{Day 2 measurement} = \text{Change in measurement}$$

Be sure to include a + sign if it is a positive difference, and a – sign if it is a negative difference!

- e. Rinse your container out, pour it 2/3 full with corn syrup, and *gently* add your egg.
- f. Record “**EGG IN CORN SYRUP OBSERVATIONS**” (*3 observations, minimum*).
- g. Complete the “**PREDICTIONS FOR NEXT OBSERVATION DAY**” section of your data table.
- h. Complete the “**DAY 2 QUESTIONS**” of the **LAB WRAP-UP QUESTIONS**.
- i. Set jar in safe spot, clean up. You are done for today.

Day 3

- a. Record “**EGG IN CORN SYRUP OBSERVATIONS**” (*6 observations, minimum*).
- b. *Gently* remove the egg, and measure the circumference.
- c. Weigh your egg and record the data (make sure you are recording the weight of the egg only).
- d. Calculate the change in weight and circumference. Use this equation:

$$\text{Day 2 measurement} - \text{Day 3 measurement} = \text{Change in measurement}$$

Be sure to include a + sign if it is a positive difference, and a – sign if it is a negative difference!

- e. **CLEAN UP ALL MATERIALS.**
- f. Complete the “**DAY 3 QUESTIONS**” of the **LAB WRAP-UP QUESTIONS**.