

NAME _____
 DATE _____ CLASS _____

LAB #1 EGG EXPERIMENT: PERMEABILITY OF MEMBRANES

Work in your assigned groups. This experiment will be carried out over four days. Therefore, allow a few minutes each day to prepare the sample and record the results. This is a discovery type experiment, which means your teacher will not be telling you what to expect. You must discover the results and problems on your own. Record all of your results on a copy of the table that follows to be put into your binders when you have finished and it has been graded. Although you will be working in groups, you should be recording your information on individual handouts to be placed in your binders. Carefully read the following instructions. If you have any questions, ask the teacher before you begin.

Choose group roles. Write your names in the space provided.

Recorder _____
 (Remember: you are all recorders for this experiment!)
 Facilitator _____
 Illustrator _____
 Manager _____

Before you begin this lab, look over the title and the instructions for each day. Decide what question you might ask, as a scientist, that you would like to have answered in this lab experiment. Write it below.

QUESTION: _____

Day 1:

1. Measure the longitudinal and transverse circumference of the egg with the string and ruler, that is, you measure the circumference of the egg by placing the string around the circumference of the egg, and marking the string to indicate the length, Then take the string and place it on the ruler to determine the length in cm. Write the circumferences in cm in the table below.
2. Weigh the egg to determine the mass. Remember to “zero” the scale before measuring the mass. (Ask teacher for assistance if you don’t remember how.) Place a paper cup on the scale and determine its mass. Then mark down the mass. Put the egg in the paper cup and mass the egg and cup. Mark down the mass. Subtract the mass of the cup from the cup and egg mass to determine the mass of the egg. Mark the mass of the egg in the table below.
3. Put the egg in a plastic cup or glass beaker and add enough acetic acid to cover it. Make sure you record how much acetic acid you used by measuring the amount with a graduated cylinder. For example, you have a 100 ml of acetic acid in a graduated cylinder. You pour acetic acid into the plastic cup until the egg is covered. You have 32 ml of acetic acid left in the graduated cylinder, which indicates that you used 68 ml of acetic acid to cover the egg. Then you would put 68 ml in the column labeled Initial Volume of Solution.
4. Cover the plastic cup with aluminum foil.
5. When you have finished the first four steps and filled in the chart, get your teacher to initial here: _____

Use the following table to record the results for the four-day experiment:

Solution to Add	Mass of Egg (g)	Longitudinal Circumference of Egg (cm)	Transverse Circumference of Egg (cm)	Initial Volume of Solution (ml)	Final Volume of Solution (ml)
Acetic Acid (day 1)					
Glucose (day 2)					
Water (day 3)					
None (day 4)					



Day 2:

1. Gently remove the egg from the plastic cup and rinse it in water.
2. Measure the amount of acetic acid remaining in the plastic cup by pouring it into a graduated cylinder and determining the volume. Record the value in the column called Final Volume of Solution in the row for Acetic Acid.
3. Measure the longitudinal and transverse circumferences of the egg, weigh the mass of the egg and record data in the table, as done in day 1.
4. Rinse out the plastic cup and put the egg in it again. Add enough glucose solution to cover the egg. Again record the quantity of solution used in the column called Initial Volume by measuring the volume added, as indicated in day 1.
5. Cover the plastic cup with aluminum foil.
6. When you have completed numbers 1-5, get your teacher to initial here: _____

Day 3:

1. Gently remove the egg from the plastic cup and rinse it in water.
2. Measure the amount of glucose solution remaining with the graduated cylinder by pouring it into a graduated cylinder and determining the volume. Record the value in the column called Final Volume of Solution in the row for glucose.
3. Measure the longitudinal and transverse circumferences of the egg, weigh the mass of the egg and record data in the table, as done in day 1 and 2.
4. Rinse out the plastic cup and put the egg in it again. Add enough distilled water to cover the egg. Again record the quantity of solution used in the column called Initial Volume of Solution by measuring the volume added, as indicated in day 1.
5. Cover the plastic cup with aluminum foil.
6. When you have completed numbers 1-5, get your teacher to initial here: _____

Day 4:

1. Gently remove the egg from the plastic cup and rinse it in water.
2. Measure the amount of distilled water remaining with the graduated cylinder by pouring it into a graduated cylinder and determining the volume. Record the value in the column called Final Volume of Solution in the row for distilled water.
3. Measure the longitudinal and transverse circumferences of the egg, weigh the mass of the egg and record data in the table as done in day 1, 2 and 3.
4. Look at all of your recorded data. In the space provided below, draw some educated conclusions.

Conclusions: _____

5. When you have finished, turn this sheet in.

