**Eggcellosis - Osmosis in Eggs – Day 1**

**Objective:** Observe the effects on an egg (cell) placed in vinegar, then in water, and corn syrup, and salt separately. Relate this to osmosis in cells in an organism.

**Materials:**

* 3 clear plastic cups (3)
* chicken eggs (3)
* triple beam balance or digital scale
* measuring tape or string and a ruler
* vinegar (approximately 400 mL)
* plastic wrap (2 medium size pieces)
* water (approximately 200 mL)
* corn syrup (approximately 200 mL)
* salt
* marker

**Day I Procedure**: - 40 minutes

1. Obtain three clear plastic cups. Label the cups - #1 water, #2 glucose, and #3 salt and put your group name and class period on all cups.

2. Obtain three chicken eggs from the table. Please be careful. You will only receive three eggs.

3. Use a triple-beam balance or digital scale to measure the mass of each egg. Record the mass in the data table provided.

4. Use a string to measure the circumference of each egg in cm (around the widest part). Use a ruler to measure the length of the string. Record the circumference in the data table.

5. Place one egg in each cup. Fill the cup with enough vinegar to cover the egg. Use cling wrap to cover the top of the beaker.

6. Leave the eggs overnight.

7. Answer the questions on the handout.

**Day I Questions:**

1. Why are you placing the eggs in vinegar?

2. What do you think will happen to the eggs overnight?

3. How is the chicken egg an appropriate model for a cell?

**Eggcellosis - Osmosis in Eggs – Day 2 and 3**

**Day 2 Procedure: - 30 minutes**

1.Remove eggs from their vinegar and wash. Rub the egg gently to remove as much of the shell as possible. If a small portion of the shell is stuck, this is okay.

2. Gently dry each egg, and measure its mass. Record the mass in the data table.

3. Use a string to measure the circumference of each egg. Record in the data table.

4. Empty the vinegar from beakers down the drain. Place egg #1 back into beaker #1. Fill beaker #1 with enough water to cover the egg.

5. Empty the vinegar from beakers down the drain. . Place egg #2 back into beaker #2. Fill beaker #2 with enough corn syrup solution to cover the egg.

6. Empty the vinegar from beakers down the drain. . Place egg #3 back into beaker #3. Fill beaker #3 with enough salt solution to cover the egg.

6. Wash your hands thoroughly, and then answer the questions on your handout.

**Day II Questions:**

1. What happened to the mass of the eggs? Why do you think this happened?

2. What do you think will happen to the egg in beaker #1?

3. What do you think will happen to the egg in beaker #2?

4. What do you think will happen to the egg in beaker #3?

**Day III Procedure: - 20 minutes**

1. Remove the egg from beaker #1, dry it, and measure its mass and circumference. Record the measurements in the data table.

2. Remove the egg from beaker #2, rinse the corn syrup off of the egg, dry it, and measure its mass and circumference. Record the measurements in the data table.

3. Remove the egg from beaker #3, rinse the corn syrup off of the egg, dry it, and measure its mass and circumference. Record the measurements in the data table.

3. Dispose of all materials, following your teacher’s instructions. Solids in the trash and liquids down the drain. Eggs in special container.

4. Clean the beakers and your lab area. Wash your hands thoroughly, and then answer the questions below.

**Day III Questions:**

1. What happened to the egg in beaker #1? Why do you think this happened?

2. What happened to the egg in beaker #2? Why do you think this happened?

3. The title of this lab is “Osmosis in Eggs”. Based on that title and what you observed in the eggs, what do you think osmosis means?

**Eggcellosis - Osmosis in Eggs**

**Objective:** Observe the effects on an egg (cell) placed in vinegar, water, and corn syrup, and salt. Relate this to osmosis in cells in an organism.

**Cup # 1 -\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Day | Mass (g) | Circumference (cm) | Observations |
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**Cup # 2 - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| --- | --- | --- | --- |
| Day | Mass (g) | Circumference (cm) | Observations |
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**Cup # 3 - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Day | Mass (g) | Circumference (cm) | Observations |
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**Day I Questions: Answer in complete sentences.**

1. Why are you placing the eggs in vinegar?

2. What do you think will happen to the eggs overnight?

3. How is the chicken egg an appropriate model for a cell?

**Day II Questions: Answer in complete sentences.**

1. What happened to the mass of the eggs? Why do you think this happened?

2. What do you think will happen to the egg in cup #1?

3. What do you think will happen to the egg in cup #2?

4. What do you think will happen to the egg in cup #3?

**Day III Questions: Answer in complete sentences.**

1. What happened to the egg in cup #1? Why do you think this happened?

2. What happened to the egg in cup #2? Why do you think this happened?

3. What happened to the egg in cup #3? Why do you think this happened?

3. The title of this lab is “Osmosis in Eggs”. Based on that title and what you observed in the eggs, what do you think osmosis means?