#  Osmosis/Plasmolysis Lab Name:

**Problem**: How do solutions of various salt concentrations influence osmosis in relation to an onion cell?

**Materials**: (per student group):

red onion epidermis forceps, dropper
distilled water NaCl solution paper towels

microscope slide cover slip

# Procedure

1. Make a wet mount of the red onion epidermis.

2. Examine under low power. When you have a clear view of several cells, switch to high power. Make a **labeled** drawing (cell wall, membrane, cytosol) of your cells. This will give you a record of the original appearance of the onion cells.

3. Take a dropper and add several drops of salt solution to one side of your cover slip while placing a small piece of paper towel along the opposite edge of the cover slip. The paper should draw out the water and draw in the salt solution.

4. Observe the effects of the saline (salt) solution on the onion cells. Make a properly **labeled**, careful drawing of the cells' appearance. 🡪

5. Replace the sodium chloride (NaCl) solution with distilled water in the same way that the salt solution was added. Make a properly labeled drawing of the cells' 🡨appearance in the space provided.

**Answer the following questions:**

1. Draw a diagram to indicate the **relative proportions of salt and water** within the onion cells and outside the onion cells when they were placed in the saline (salt) solution. Use **X** to represent solute and to represent solvent

Also use an arrow to properly indicate the direction of osmosis. 🡪

2. Draw a diagram to indicate the relative proportions of salt and water within the onion cells and outside the onion cells when they were placed in the distilled water solution. Also use an arrow to properly indicate the direction of osmosis.

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3. Red blood cells (and other animal cells) placed in a distilled water solution usually swell up and burst. **What** prevented the red onion cells from swelling and bursting when they were placed in the distilled water? Highlight **it** in a picture🡪

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# Application Questions

Make sure you correctly use ALL of the following terms at least once in your explanations. Hypertonic, hypotonic, solute, solvent, semi-permeable membrane, diffuse/diffusion, osmose/osmosis, plasmolysis, cytolysis

4. Why do grocery store owners spray fresh fruits and vegetables with water? (talk the talk and use biology

terms)

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5. Roads are sometimes salted to melt ice. What does this do to plants around the roadside and why?

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6. If a shipwrecked crew drinks sea water, they will probably die. Why?

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1. If a bowl of fresh strawberries is sprinkled with sugar, a few minutes later the berries will be covered

with juice. Why?

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