

**Tuesday, November 20<sup>th</sup>, 2012**

Unit: Cells Topic: Osmosis	Date: 11/20/2012 Class: Biology
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**Michigan Objectives:**

**B2.5h** Explain the role of cell membranes as a highly selective barrier (diffusion, osmosis, and active transport).

**Illinois Objectives:**

**12.11.05** Understand how the semi-permeable membranes regulate the flow of substances in and out of the cell body.

**My Lesson Objectives:**

- Define hypotonic, isotonic, and hypertonic in terms of water concentration and solute concentration.
- Explain that water moves across a semi-permeable membrane from hypotonic to hypertonic until an isotonicity (or equilibrium) is reached.

Activities:	Materials/Equipment:
<ul style="list-style-type: none"><li>• Bellringer (10 minutes)</li><li>• Collect data from gummy bear osmosis lab (20 minutes)</li><li>• Answer analysis questions on gummy bear osmosis (20 minutes)<ul style="list-style-type: none"><li>◦ Analysis questions due: TODAY</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Electronic balance</li><li>• paper towels</li><li>• metric rulers</li><li>• gummy bears soaked in solutions from yesterday</li><li>• copies of bellringer</li></ul>

Assessment: (Embedded, Formal)

**Embedded:**

Bellringer: A cell in a beaker has a concentration of 0.9% NaCl and is bathed in a 5% NaCl solution. The membrane is permeable to water but not to NaCl.

- 1 In which direction is the net movement of water here?
- 2 How will this affect the cell?  
If a person is thirsty and wants to rehydrate by drinking a beverage, should the beverage be hypotonic, hypertonic, or isotonic to ensure the net flow of water goes from the beverage to their cells? \_\_\_\_\_
- 3 Using your reasoning above, what would happen to a person's cells if they drink salt water?

**Formal:**

Analysis Questions

- 1 What happened to the bears when placed in tap water?
- 2 What happened to the bears when placed in salt water?
- 3 What do you think would happen to the bears, if after the last day, they were again placed in tap water?
- 4 Write a paragraph explaining the results of this experiment using the concept of osmosis. Explain if the gummi bear or the solution was **hypotonic** or **hypertonic** for each trial.