

Lesson Plan Template

Day 9

Grade: High School		Subject: Biology	
Materials: Dialysis tubing, diffusion tubes		Technology Needed:	
Instructional Strategies: <ul style="list-style-type: none"> <input type="checkbox"/> Direct instruction <input type="checkbox"/> Guided practice <input type="checkbox"/> Socratic Seminar <input type="checkbox"/> Learning Centers <input type="checkbox"/> Lecture <input type="checkbox"/> Technology integration <input type="checkbox"/> Other (list) 		Guided Practices and Concrete Application: <ul style="list-style-type: none"> <input type="checkbox"/> Large group activity <input type="checkbox"/> Independent activity <input type="checkbox"/> Pairing/collaboration <input type="checkbox"/> Simulations/Scenarios <input type="checkbox"/> Other (list) Explain:	
Standard(s) HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis. ISTE-5 Computational Thinker 5b. Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.		Differentiation Below Proficiency: Above Proficiency: Approaching/Emerging Proficiency: Modalities/Learning Preferences:	
Objective(s) Students will be able to infer the importance of the cell membrane and its use to the cells. Students will be able to differentiate the types of cell transport and the needs for each one.			
Bloom's Taxonomy Cognitive Level:			
Classroom Management- (grouping(s), movement/transitions, etc.) Students will be in their lab groups. These are preassigned and each table will have 2 groups of 2.		Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)	
Minutes	Procedures		
	Set-up/Prep:		
	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)		
5	Explain: (concepts, procedures, vocabulary, etc.) Before students enter the lab, they will be handed the worksheet and read the instructions before they are allowed into the lab.		

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	<p>When students have completed the lab, they will be required to clean their stations and dispose of the tubing.</p>	
<p>45</p>	<p>Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)</p> <p>Osmosis lab Look at purple onion skin under the microscope Compare isotonic, hypertonic, hypotonic solutions First look at the skin under fresh water (isotonic), then add salt water (hypotonic), and if time allows add freshwater back to the slide and see what happens Draw diagrams of above reactions Compare osmosis to diffusion Prepare beaker of water, and drop 3 drops of food coloring in the bottom using a pipet, watch it disperse into the water</p>	
	<p>Review (wrap up and transition to next activity):</p> <p>Tomorrow will be a review day of the unit in preparation for the upcoming test.</p>	
<p>Formative Assessment: (linked to objectives) Progress monitoring throughout lesson-clarifying questions, check-in strategies, etc.</p> <p>Consideration for Back-up Plan:</p>	<p>Summative Assessment (linked back to objectives) End of lesson:</p> <p>Lab turn in</p> <p>If applicable- overall unit, chapter, concept, etc.:</p>	
<p>Reflection (What went well? What did the students learn? How do you know? What changes would you make?):</p>		

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Osmosis and Diffusion Lab

Name:

Date:

Class Period:

1. Osmosis:

2. Hypertonic:

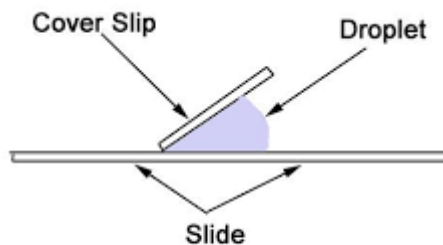
3. Isotonic:

4. Hypotonic:

5. Diffusion:

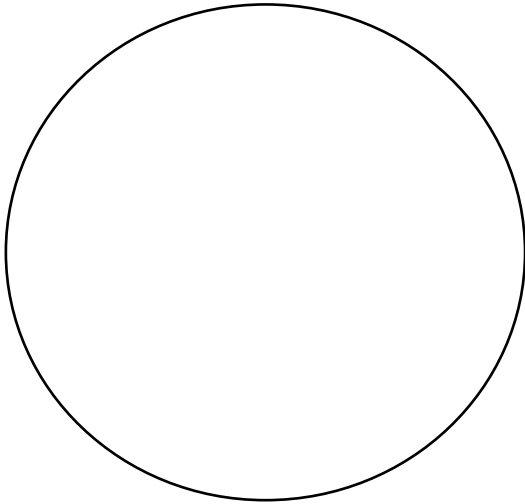
Directions:

1. Using a knife or metal tweezers, cut a THIN slice of purple onion skin. Place the onion skin on a clean slide.
2. Put 2-3 drops of fresh water on top of the onion skin.
3. Observe the skin under the microscope on medium power and draw the skin.
4. Remove the slide from the microscope. Slowly add salt water to one side of the cover slip and hold a dry paper towel to the other side. The paper towel should absorb the fresh water and salt water should be replaced beneath the cover slip.

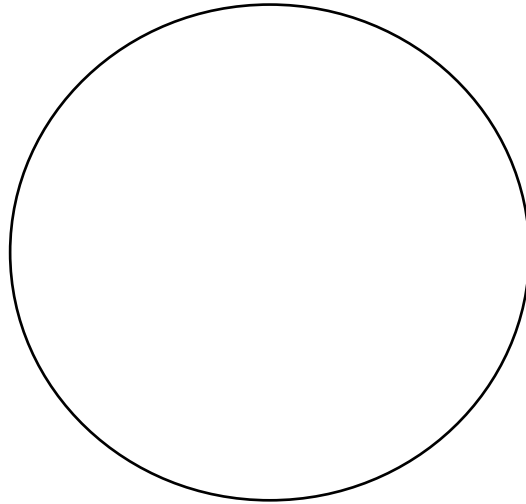


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5. After the salt water has been on the slide for at least 2 minutes, draw your observations under medium power.



Fresh water 400x



Salt water 400x

Post-Lab Questions:

1. What happened to the cell wall when you added the salt water?

2. What happened to the cell membrane and cytoplasm when you added the salt water?

3. Explain why you think the changes occurred with the salt water? (What is happening inside the cell?)

4. predict what would happen to your red blood cells if you had too much salt in your bloodstream?
