

Name: Natalie Lartigue (part of group with Greg, Ellen, and Diane)

**LESSON PLAN**

Lesson Topic: Diffusion/Osmosis using Koolickles

Grade Level: 7<sup>th</sup> Including Special Populations

**Broad-Based Theme: Place as Text in the Most Southern Place on Earth**

Generalizations (3 or 4):

1. Children of the Delta have invented Koolickles to create a snack that is sweet, sour, inexpensive, and readily available.
2. Children will need to understand that molecules move across cellular membranes.
3. Children will need to follow the steps of the scientific method to create Koolickles.
4. Children will need to understand the difference between osmosis, diffusion, solute, solvent, and solution

Guiding Questions (GQ):

1. Will students be able to make a solution potent enough to make Koolickles? (Potential pitfalls would be surface area and specific measurement)
2. Will students be able to identify the differences between osmosis (moving water particles) vs. diffusion (using other solutions)
3. Will students understand why a pickle is selectively permeable while other foods would not be?
4. If the student's conclusion (pickle) does or does not taste well, will the child be able to identify where they went wrong in the scientific process?

Lesson Plan Objective(s):	Gen/GQ #	Procedure:	Materials/Resources	Evaluation related to objectives
Students will illustrate and demonstrate osmosis and diffusion in cells that are selectively permeable.	1-4	A. Introduction/Motivation  Students will be invited to taste a small sample of a Koolickle	Dill Pickles Ziploc Bags Jars with Lids Various Flavors of KoolAid	Completion of Data from Lab  Teacher observed evaluation of groups
Students will pose questions that can be answered by using testable scientific investigations.	1-4	B. Study/Learning Activities Practice making various strengths of KoolAid solutions	Sanitary Measuring tools to make the solution for the Koolickles.	Group Lab Reports and analysis of data and whether or not the hypothesis was correct or incorrect
Students will combine information, data, and knowledge to reach a conclusion or make a prediction.	1-4	Complete a Data sheet to note changes over a period of a week to the experimental pickles Have each lab group follow all of the steps of the scientific method, including creating a control.		

		<p>C. Culmination</p> <p>Taste test of all Koolickles.</p> <p>D. Follow-up</p> <p>Revisit the vocabulary associated with this lab and make Koolickles again later in the year to make sure that the learning is long term</p>		
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