

Enrichment Region Lesson Plan Format

NC SCOC Objective	1.02 & 1.05 Develop appropriate experimental procedures for: <ul style="list-style-type: none"> • Given questions. • Student generated questions. Analyze evidence to: <ul style="list-style-type: none"> • Explain observations. • Make inferences and predictions. • Develop the relationship between evidence and explanation. 	
Essential Question	EQ: Explain the difference between a chemical salt and table salt. Be able to identify the properties/uses of each.	
Vocabulary	Sodium Chloride (NaCl or table salt), Sodium Polyacrylate (Super Absorbent Powder), Erlenmeyer Flask, Beaker, Cross-Section, Saturated, Unsaturated, Super Saturated, Qualitative/Quantitative Observation, Scientific Method: (Problem/Question, Hypothesis, Experiment, Analyze Data, Conclusion)	
Materials/Manipulatives	<ul style="list-style-type: none"> • Lab Equipment listed above. • Table Salt, Super Absorbent Powder, Diapers, Scissors, Water 	
Technology Integration	Compu Cart, Lab Equipment, Document Camera	
Warm Up/Cultural Connection	Powerpoint: How much liquid does a diaper hold? What, inside of a diaper, absorbs liquid? Does this process involve chemistry? If so, how?	
<i>PART ONE:</i> <i>Step One: Problem/Question & Hypothesis</i>	Me: Introduced	Guided students through warm-up: Allowed each student to predict how much liquid the given diaper would hold in milliliter increments.
Minute by Minute Assessment <i>Step Two: Experiment</i>	We: Examined	Each student group added water to a diaper in 200 mL increments from their given beaker. Quantitative measurements recorded with each addition. Students noted whether or not their diapers were 1) unsaturated, 2) saturated, 3) supersaturated.
Minute by Minute Assessment <i>Step Three: Analyze Data</i>	Few: Guided Exploration	In order to determine saturation conditions, as listed above, students defined parameters as a class. Diapers were determined to be saturated/supersaturated when either spilling over or leaking.
Minute by Minute Assessment <i>Step Four: Conclusion</i>	They: Independent Assessment	Students determined diapers to be saturated at an average of 1200 mL of added water.

<u>PART TWO:</u> <i>Step One: Problem/Question & Hypothesis</i>	Me: Introduced	Prompted students to produce additional hypothesis: What, inside of a diaper, absorbs liquid?
Minute by Minute Assessment		
<i>Step Two: Experiment</i>	We: Explored	<ul style="list-style-type: none"> • Demonstrated how to perform cross-section cutting of diaper • Each student group dissected saturated diaper/Students developed additional hypothesis concerning diaper composition • Student volunteers add Sodium Chloride (table salt) & Sodium Polyacrylate (Super Absorbent Powder) to separate flasks containing an added amount of water.
Minute by Minute Assessment		
<i>Step Three: Analyze Data</i>	Few: Guided Exploration	Students make qualitative observations to determine the difference between salts. Added sodium chloride (table salt) results in salt water (liquid) solution. Added sodium polyacrylate (super absorbent powder) results in gel-like (solid) mixture.
Minute by Minute Assessment		
<i>Step Four: Conclusion</i>	They: Assessment	Students conclude that diapers contain Sodium Polyacrylate/identify it as the chemical salt in the lab. Students determine that the given chemical salt absorbs large amounts of liquid.
Minute by Minute Assessment		
<i>Review/Recap:</i>	Summary/Extension	Students brainstorm additional uses of Sodium Polyacrylate (i.e. flood/liquid spill control, water beds, etc.)
Corrective Instruction	Me: Modeled	Addition of sodium chloride (table salt) to sodium polyacrylate (super absorbent powder) allows students to see that they have opposite chemical properties. Adding table salt to super absorbent powder turns gel-like substance into a liquid!