

<p>Grade: 2</p>	<p>Subject: Science</p>
<p>Materials: Snow, two bowls, space heater</p>	<p>Technology Needed:</p>
<p>Instructional Strategies:</p> <ul style="list-style-type: none"> € Direct instruction € Guided practice € Socratic Seminar € Learning Centers € Lecture € Technology integration € Other (list) <p>€ Peer teaching/collaboration/operative learning</p> <p>€ Visuals/Graphic organizers</p> <p>€ PBL</p> <p>€ Discussion/Debate</p> <p>€ Modeling</p>	<p>Guided Practices and Concrete Application:</p> <ul style="list-style-type: none"> € Large group activity € Independent activity € Pairing/collaboration € Simulations/Scenarios € Other (list) <p>€ Hands-on</p> <ul style="list-style-type: none"> € Technology integration € Imitation/Repeat/Mimic <p>Explain:</p>
<p>Standard(s)</p> <p>Science: 2-PS1-1 - Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p>	<p>Differentiation</p> <p>Below Proficiency: Students below proficiency will be able to understand the differences between the different states of matter, but struggle in describing what those differences are.</p> <p>Above Proficiency: Students above proficiency will be able to go more deeply into the differences between the states of matter, and how those different states change in containers.</p>
<p>Objective(s)</p> <p>By the end of the lesson, students will be able to discuss with their classmates about the physical properties that change with snow when exposed to heat.</p> <p>Bloom's Taxonomy Cognitive Level: Knowledge</p>	<p>Approaching/Emerging Proficiency: Students approaching proficiency understand the different states of matter, and are beginning to see the different ways these states fill space.</p> <p>Modalities/Learning Preferences:</p> <p>Hands on Visual Audible</p>
<p>Classroom Management- (grouping(s), movement/transitions, etc.)</p> <ul style="list-style-type: none"> ● Students will meet on the carpet for reading time ● Student Leader will lineup first <ul style="list-style-type: none"> ○ Students will be dismissed by rows ○ Caboose will automatically go to the back of the line ● Practice safe movement through the classroom <ul style="list-style-type: none"> ○ Controlling bodies 	<p>Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)</p> <ul style="list-style-type: none"> ● Raised hand if they have something to say <ul style="list-style-type: none"> ○ No blurts ○ Stay seated on both pockets - quiet bodies ● If students knew the book before today, they will be polite and not ruin it for the other students

	○ Keeping thoughts inside our brains
Minutes	Procedures
5	Set-up/Prep: <ul style="list-style-type: none"> ● Retrieve snow from the frozen wasteland known as North Dakota
5-10	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) <ul style="list-style-type: none"> ● Pre-assessment <ul style="list-style-type: none"> ○ Students will be given 10 items and must determine if they are a Liquid, Solid, or Gas <ol style="list-style-type: none"> Wind - G Milk - L Table - S Melted Snow - L Smoke - G Pencil - S Car Exhaust - G Soda - L Apple - S Jell-O - S ○ Students will turn in the sheets after finishing their groupings
5-10	Explain: (concepts, procedures, vocabulary, etc.) Vocabulary: Solid - Tightly packed, have a particular shape Liquid - Do not have a particular shape, but can be measured Gas - No definite shape, fill the space they are given <ul style="list-style-type: none"> ● I will be reading “Sneezy the Snowman” to the students prior to our experiment <ul style="list-style-type: none"> ○ The book discusses a snowman who continuously melts and gets put back together because he wants to stay warm <ul style="list-style-type: none"> ■ This is a good way to introduce the question of why/how does Sneezy keep going from Solid to Liquid ○ After finishing the book and discussing it, we are moving into our experiment
10-15	Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) <ul style="list-style-type: none"> ● Two containers of snow will be set in the room <ul style="list-style-type: none"> ○ One next to the windows so that it does not completely melt and maintains its physical properties ○ The other next to the place heater in the class so that it can show the transition into a liquid state <ul style="list-style-type: none"> ■ Students will be split into two groups and be prompted to discuss what they believe is happening at each station
5	Review (wrap up and transition to next activity): <ul style="list-style-type: none"> ● After students discuss, they will be given a minute or two to share their final thoughts, if any, on what is happening with the snow ● Following the end of the discussions I will be showing them the Melted snowman art project they will be working on later in the month

Formative Assessment: (linked to objectives, during learning)

- **Progress monitoring throughout lesson (how can you document your student's learning?)**
 - Pre-assessment understanding
 - Questions following the reading
 - Ability to discuss the experiment

Summative Assessment (linked back to objectives, END of learning)

- Discussion of the experiment that they are at
 - Proof of ideas beginning to form on why this might be happening

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

This lesson was definitely my best of the week because of both my comfortability with the class and nature of having experiments in the classroom. The excitement levels, while distracting in when they first got into the classroom, were incredible during the experiments that the kids could observe whenever they had a little extra time was incredible. They absolutely loved having something hands-on that they could observe that they found interesting at the same time. For the lesson I introduced them to the different states of matter, and we started off the class with a quick pre-assessment of Solids, Liquids, and Gases. From the list above (in the engage section) the only answer students consistently missed was Jello, but that was expected because of its solid and liquid properties. Our experiment dealt with two of the matter states of water, its solidified and melted forms. We utilized snow in front of a place heater and next to the window to show the different speeds it changing states of matter. Students learned that sometimes experiments do go as you expect them to because of unplanned for variables, which we encountered when there was sun shining through the window into our snow. The place heater also wasn't being put directly onto the snow, which made that piece of snow melt slower than the other. Before students were dismissed to bundle for the day, we had a class discussion on the thoughts they had about why things didn't go as planned, and what we expected to happen originally. For changes I would make, making the experimental variables as planned would be number 1 just because it is good for kids to see science experiments work correctly. Having more clear instruction on how we act with experiments that need time to sit, because touching them can also alter the results. This lesson was also a bit last minute because Mrs. Pope and I found the experiment that would work much better than what we had originally planned. This caused me to have my lesson to utilize, but also had me thinking on my feet quite a bit. The late start to the school day also posed as a bit of a roadblock, as I had to split my lesson in half with lunch. Reading the book went well, but then after lunch we had to spend about five minutes reviewing the book anyway, so having those fit more closely together would have been ideal. Again, I felt this was my best lesson of the week and greatly enjoyed running an experiment with the students. The late start school day definitely reflected in the students from an energy aspect too, especially when they first showed up. We had to do a couple breathing games that gave them a second to calm down and settle into the classroom, but the whole day was a blur for everywhere they needed to get to. Science is a subject I always enjoyed throughout my educational career, and I was overjoyed to share that with some students who also shared that curiosity and enjoyment throughout my lesson with them. Schools are stifling students creativity in today's emphasis on Math and Science, so letting them process these subjects in a creative way helps bridge that gap.