

Properties of Matter 2nd Grade Unit

Grade Level/Content Area

2nd grade/ Science

Unit Title

Properties of Matter

Unit Abstract

A description of the featured unit of study that characterizes the subject matter to be studied and states very generally what students are expected to learn and the types of learning activities that will be conducted to provide opportunities for learning.

Students will learn about the physical, observable properties of matter. They will describe objects based on their properties. They will observe changes in matter, learn about the different states of matter and create a animated model that explains the states of matter.

Standards/Benchmarks

Identifying Expectations and Standards helps to ensure curricular alignment.

Are the appropriate goals (ie: content standards, benchmarks, curriculum objectives) identified?

2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
2-PS1-3 Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

Essential Questions

What is matter?
How can matter be changed?

Student will know...

1. Matter can be described and classified by its observable properties.
2. Matter can be found as solid, liquid, or gas.
3. Changes in temperature can change matter.

Students will be able to....

1. Describe and classify materials based on their observable properties
2. Create a model that explains different states of matter

Current Teaching Design*

List every activity that you currently complete in your traditional classroom situation to teach this unit.

1. Observing and recording the changes of ice melting over time
2. Touching and observing different materials and describing them.
3. Observing the changes after different materials that have been either cooled or heated.
4. Watching a video about color and texture
5. Watching a video about different states of matter (solid, liquid, gas)
6. Watching a simulation of what happens when applying heat to ice.
7. Creating a simulation of different states of matter

Models

Station Rotation and flipped

Instruction and Activities

F2F	Online
<p>1. Teacher will show a popsicle right out of the freezer and allow students to observe it and draw it. At the end of class the teacher will show the students the popsicle again and have them observe and draw the changes they see.</p> <p>4. Students will sort a variety of materials (see resources) based on their observable properties and use words to describe them. They will create a chart.</p> <p>6. Teacher will show students examples of items then freeze them and show them to students again.</p> <p>8. Students will be given uncooked pasta to observe, touch and describe. Then students will be give cooked pasta to observe, touch and describe. They will compare the two pastas and describe the changes. Teacher can ask the following guiding questions: What does it look like? How does it feel? How would you describe the properties? How did the pasta change? Can the pasta be returned to its original form?</p> <p>11. Students will explore different solids, liquids and gases in stations.</p> <p>14. Students will act like solids, liquids and gases by moving their bodies.</p>	<p>2. Students will draw their pictures on Seesaw and they will upload them to their digital portfolio.</p> <p>3. Student will watch a video about observable properties of matter online.</p> <p>5. Students will upload a photograph of their chart to Seesaw.</p> <p>7. Students will draw pictures showing the changes they observed on the items that were frozen and upload their pictures to Seesaw.</p> <p>9. Students will upload photos of the two pastas and describe the changes they observed as a caption on Seesaw.</p> <p>10. Students will watch a video about states of matter.</p> <p>12.. Students will have access to books, read alouds and videos on Epic! about states of matter.</p> <p>13.. Students will use an online simulation of what happens when applying heat to ice and then water and observe the changes.</p> <p>15. Students will create a model of solid, liquid, gas using Scratch Jr. the upload their video to Seesaw.</p>

Assessments

F2F	Online
	<p>Teacher can use the products uploaded to Seesaw as formative assessment. The teacher will use Kahoot to check for understanding and review. The summative assessment will be the animated model students will create on Scratch Jr. There will be a rubric for self-assessment.</p> <p>https://app.seesaw.me/pages/shared_activity?share_token=CbPf6kRJRNWwJ9sI5-tYdg&prompt_id=prompt.dd65fdd0-5d45-49fc-b78f-49e4bb0a1302</p>

Resources

F2F	Online
<ul style="list-style-type: none">-balance- balloons-baking soda,vinegar, water-bottles-collection of objects that can be sorted by their observable properties: Pompons, bubble wrap, plastic spoon, wooden block, rubber band, cork, washers, plastic toys, plastic jewels in different colors, pattern blocks.-pasta-markers-construction paper-popsicles	<ul style="list-style-type: none">- Video about properties of matter: https://www.youtube.com/watch?v=ZZYnERZe3Cg- Video about states of matter: https://www.youtube.com/watch?v=wclY8F-UoTE- Melting and boiling water simulations: https://phet.colorado.edu/sims/html/states-of-matter-basics/latest/states-of-matter-basics_en.html, https://www.simbucket.com/simulation/melting-and-boiling/- Books and videos online: https://www.getepic.com/- Scratch Jr. app- Seesaw app