Activity: Matter Can Taste Good!

FOR THE TEACHER

Summary
In this activity, students will be introduced to the general differences and organization of particles in each state of matter: solid, liquid and gas. They will have the opportunity to compare the samples and then will identify each state of matter during an edible activity.

Grade Level
Elementary School

Objectives
By the end of this activity, students should be able to
  • Recognize the 3 states of matter
  • Identify a solid, a liquid, and a gas in a real word example

Chemistry Topics
This activity supports students’ understanding of
  • Matter
  • Physical Properties
  • Observations
  • States of Matter

Time
Teacher Preparation: 10-15 minutes
Lesson: Two 20 minute classes

Materials
  • Regular latex party Balloons (approximately 3 per every 4 students)
  • Water
  • Notecards
  • Ice cream- enough for one scoop per student
  • Soda- ½ cup per student
  • Cups- enough for each of your students to have 1
  • Spoons- 1 per student
  • Straws- 1 per student
  • Napkins
  • Notecards

Safety
  • Students should wash their hands thoroughly.
  • When students complete the activity, instruct them how to clean up their materials.
  • The balloon with ice in it might be heavy and could hurt if dropped.
Teacher Notes

- This activity is designed for Kindergarten through 2nd grade students.
- The teacher should know and understand the chemistry vocabulary.
  - **Matter:** Anything that takes up space.
  - **Solid:** The only type of matter that keeps its shape.
  - **Liquid:** A type of matter that flows and takes shape of its container.
  - **Gas:** A type of matter that fills all the space of its container.
- Write the name of each state of matter on a notecard and the definition on the opposite side.
- For approximately every four students in your classroom prepare the following:
  - Fill a balloon with water and put it in the freezer in advance so it has time to freeze.
  - Fill a balloon with room temperature water.
  - Fill a balloon with air.
- I suggest that you pre-scoop the ice cream into cups in order to save time at the end of the lesson.
- Be aware that in the video used for engagement in the introduction of the activity defines solids as containing particles of matter that are close together, however that is not the case for solid ice used in this activity. Ice has unique properties and even though it is solid the particles are space farther apart in solid ice than in liquid water, which is not common for a solid form of matter compared to its liquid form, and it doesn’t follow the example from the video.
- This is a link to a [picture sort](#) that you can use after the first or second day of the lesson.
- This is also a link to a [cut and paste sorting activity](#) that can be used for older students.

Day 1 Learning Objective: Matter vocabulary – matter, solid, liquid, gas

- Step 1: Show the Video introduction to matter.
- Step 2: Divide the students up into three groups. One for solids, one for liquids and one for gas.
- Step 3: Give each small group one of the vocabulary notecards. Each group will become an expert scientist on that specific state of matter. Then each will share their knowledge of the vocabulary word with the group as a whole.
- Step 4: After each group has had a chance to explain their assigned state of matter, bring out the balloons with the frozen water, the balloons with the air, and the balloons with the room temperature water. As you show each of the balloons, explain which state of matter they represent. Pass the balloons around so that students can interact with them.
- Step 5: Students should complete either the [picture sort](#) or the [cut and paste sorting activity](#) based on the level of your students.

Day 2 Learning Objective: We can eat matter!

- Step 1: Read one of the books suggested below to review vocabulary learned on day 1.
- Step 2: Give each student a cup with ice cream and ask which state of matter it would be.
- Step 3: Show the students the soda and ask which state of matter it would be.
- Step 4: Ask students which state of matter are we missing in this activity. After they tell you gas, tell them that we have all three states of matter in the 2 items shown. Then again, ask them where the gas will come from. Some students might be able to explain that there is gas in the soda and we will see it as bubbles when it is poured over the ice cream.
- Allow students to pour their soda over their ice cream to see all three phases of matter. Pass out straws, spoons, and napkins.

Suggested Books
- *Sneezy the Snowman* by Maureen Wright and Stephen Gilpin
- *What is the World Made of? All About Solids, Liquids, and Gas* by Kathleen Zoehfeld and Paul Meisel
- *Change It! Solids, Liquids, Gases and You* by Adrienne Mason
- *Solids, Liquids, and Gases* by Ginger Garrett