

# More Matter

Second Grade

Activity: 7

Time: 1 Class Period

## General Description

This activity is designed to be done after **Properties of Matter** (Activity 6) to help enhance student understanding of states of matter.

## Objectives

Students will identify objects as a solid, liquid or gas.

Students will distinguish the difference between a solid, liquid or gas.

Students will explain the effect heat has on matter and causing it to be a solid or liquid.

Students will explain that the combination of some matter results in gas.

## Arizona State Standards

SC02 S1C2 PO1 Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry

SC02 S1C2 PO4 Record data from guided investigations in an organized and appropriate format (e.g., lab book, log, notebook, chart paper)

SC02 S1C2 PO3 Use simple tools such as rulers, thermometers, magnifiers, and balances to collect data (U.S. customary units)

SC02 S1C4 PO1 Communicate the results and conclusions of an investigation (e.g., verbal, drawn, or written)

SC02 S5C1 PO2 Classify materials as solids, liquids, or gases

SC02 S5C1 PO3 Demonstrate that water can exist as a:

- gas – vapor
- liquid – water
- solid – ice

SC02 S5C1 PO4 Demonstrate that solids have a definite shape and that liquid and gases take the shape of their containers

W02 S3C2 PO1 Write expository texts (e.g., labels, lists, observations, journals)

R02 S3C2 PO1 Follow a set of written multi-step directions

M02 S2C2 PO1 Formulate questions to collect data in contextual situations

M02 S2C2 PO2 Make a simple pictograph or tally chart with appropriate labels from organized data

## Teacher Background

Matter exists in different states- solid, liquid, and gas. A common example of all three states of matter is water which can be changed from one state to another by heating or cooling. Giving students the opportunity to explore and investigate the different states helps them develop their own understanding.

## **Materials**

Candles

Match

Baking soda

Vinegar

## **Procedure/Exploration**

1. Set up four candles set up around the class. Direct the children to look at one of them, but keep away to prevent injuries.
2. Light the candle. It will take some time for the wax to begin to melt.
3. During this time ask the children what they expect to see happen. Have them record these predictions in a journal.
4. As the candle melts ask the students what causes it to melt. If they say fire ask them what they feel. Help them understand that it is the heat that is causing the wax to melt.
5. Ask them what the melted wax looks like. Help them see that the solid wax is now a liquid.
6. Ask the students what will happen to the wax that is now a liquid if the candle is blown out. Have them record their ideas into their journal.
7. Finally ask the students to go back to their desks and write down what they think made the solid candle turn not a liquid. Then ask them to write down what made the liquid candle turn back into a solid.
8. Provide students time to share their ideas and correct any misconceptions.
9. Tell the students that scientists often work with gases and they will be exploring with them today.
10. Have a small discussion about gases. Review with them the demonstration of the two balloons on the yard stick I will then blow up a balloon.
11. Show students that matter mixed together can produce a gas that is able to blow out a candle.
12. Place baking soda in the bottom of a container
13. Light a candle.
14. Place the candle so that when you mix vinegar into the baking soda the resulting gas will blow out the candle.
15. Ask students why the candle went out.
16. Provide time for them to share their ideas.
17. Clarify that scientist can test that a gas is present by using similar tests. (Scientists don't always use flame as some gases are flammable.)