

# BUBBLE BONANZA



## **BENCHMARK and TASKS**

**SC.A.1.1.1** The student knows that objects can be described, classified, and compared by their composition (e.g., wood or metal) and their physical properties (e.g., color, size, and shape).

- The student experiences that air is all around us and takes up space.
- The student creates the movement of air, called wind.

## **KEY QUESTION**

What are the characteristics of bubbles?

## **BACKGROUND INFORMATION**

Air is an invisible gas that is all around us. It is a mixture of nitrogen, oxygen, and small amounts of water vapor, argon, and carbon dioxide. Air takes up space, has mass, and exerts pressure. There is a thick layer of air all around the earth, and it pushes on everything. You cannot see air, but it is practically everywhere. You cannot feel air, except when the wind blows or when you breathe in and out. Air is essential to plant and animal life. We can live for a few days without food, but not more than five minutes without air.

Soap bubbles are air surrounded by a thin film of water and soap. The soap film wraps around the air and traps it within. The soap film is elastic/stretchy. Bubbles that are floating freely in the air are usually spherical. A sphere is the smallest surface area that can contain the air inside with the least amount of stretching for the soap film. A bubble that is blown on top of a wet surface uses that surface as a wall and will contract to form a dome shape.

The colors you see in a soap bubble come from *white light*. When white light passes through the soap bubble, the colors of the rainbow separate so they can be seen. A bubble will look black at the top just before it pops. Bubbles pop when the water evaporates. They also pop when they come in contact with the wind, a dry surface, or dry air.

## **MATERIALS**

### **Teacher**

bubble wand  
large container or bucket for bubble solution

*Bubbles* by Parkes (Newbridge)

*Bubbles, Bubbles Everywhere Bubbles, Bubbles Everywhere* by Kuhn & Berger (Newbridge)

### **Per group**

newspaper  
containers of bubble solution made ahead of time

### **Bubble solution ingredients**

1 cup Dawn or Joy liquid detergent  
1 gallon water  
¼ cup glycerin (optional)

### **Per student**

plastic cup for bubble solution  
1 plastic straw  
1 pipe cleaner for Day One

- 6 pipe cleaners (Pipe cleaners can be cut in half.)
- 1 cup with small amount of bubble solution

### **TEACHING TIPS**

1. Prepare the bubble solution ahead of time. The recipe may need to be doubled or tripled, depending on your class size.
2. If at all possible, plan to do this activity outdoors.
3. Children should not share bubble makers that have come in contact with their mouths. Be sure to gather enough bubble makers for each student to have one.
4. Aluminum cookie sheets work well for the table activity.
5. Use food coloring only for bubble print on paper. Food dye stains clothes.

### **DAY ONE**

#### **ENGAGE**

Have the students sit in a circle on the floor. Using a bubble wand, demonstrate how to blow bubbles. Let the bubbles float through the air as the students observe the movement.

Ask:

*What did you see?*

*How many of you have blown bubbles before?*

*What can you tell me about the bubbles?*

*What do you think is inside bubbles?*

#### **EXPLORE**

1. Give students a straw and ask them to practice blowing through the straw. Remind them not to suck in the solution. **“To suck is yuck!”**
2. Show students how to make their own bubble wands from pipe cleaners.
3. Take students out on a calm (not windy) day.
4. Give each student a cup of bubble solution and allow ample time for bubble exploration.

#### **EXPLAIN**

After experimenting with the bubbles, bring the students back together. Discuss the color, shape, and size of the bubbles.

Ask:

*How do you make bubbles?*

*What is inside a bubble?*

*How did you make bubbles move?*

*Did they make any sound?*

*What happened to the bubbles when they landed?*

*How does a bubble feel?*

*How does the bubble solution feel?*

### **DAY TWO**

#### **EXPLORE**

Inside the classroom:

- Give students several pipe cleaners and have them make bubble wands that are different sizes (e.g., large circle, small circle).
- Take students outside with their bubble wands.
- Give each student a cup of bubble solution and allow ample time for bubble exploration.

## **EXPLAIN**

1. Challenge the students to:  
*Make the smallest bubble you can.*  
*Make the largest bubble you can.*  
*Make many bubbles at one time.*  
*Catch a bubble on your finger.*  
*Catch a bubble on your bubble wand.*  
*Make a bubble that lasts a long time.*  
*Can you make the bubble move?*
2. Return to the classroom for discussion.  
Ask:  
*Did different bubble makers make different shapes of bubbles?*  
*How were the bubbles different?*  
*How were the bubbles alike?*  
*How did the bubbles move?*  
*Why did you have to blow into the bubble maker?*  
*What do you think might be inside the bubbles?*  
*What did you do to make the bubbles move?*

## **EXTEND/APPLY**

Encourage students to observe at school and at home to find objects that are filled with air (balloons, beach balls, tires, etc.).

## **EXTENSIONS**

To see a rainbow in the bubble, use the overhead projector and put a small amount of bubble solution into a clear rectangular glass dish or clear plastic lid for take-out salad containers. Using a straw, blow a half bubble. Ask students what they see (colors on the bubble). Blow more bubbles; larger and smaller. Do the colors on the bubble change?

## **ASSESSMENT**

Give each student a circle the size of a large paper plate cut from white drawing paper. Have the students draw pictures onto the paper of what they learned about bubbles. Have students dictate a sentence or two about their pictures. Look for the following to be included in the drawing:

- Bubbles have air inside of them.
- Bubbles are different sizes.
- Bubbles can be moved by air.
- The student can move the bubbles by creating air (blowing on them).