Boom and Fizz
Demonstration Observation Sheet

Demonstration 1: _____

I predict that a chemical/physical change will occur.

Observations: _____

_____

This demonstration resulted in a chemical/physical change because _____

_____

Demonstration 2: _____

I predict that a chemical/physical change will occur.

Observations: _____

_____

This demonstration resulted in a chemical/physical change because _____

_____

Demonstration 3: _____

I predict that a chemical/physical change will occur.

Observations: _____

_____

This demonstration resulted in a chemical/physical change because _____

_____

Demonstration 4: _____

I predict that a chemical/physical change will occur.

Observations: _____

_____

This demonstration resulted in a chemical/physical change because _____

_____

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Demonstration 5: _____
I predict that a chemical/physical change will occur.
Observations: _____

_____
This demonstration resulted in a chemical/physical change because _____

Demonstration 6: _____
I predict that a chemical/physical change will occur.
Observations: _____

_____
This demonstration resulted in a chemical/physical change because _____

Demonstration 7: _____
I predict that a chemical/physical change will occur.
Observations: _____

_____
This demonstration resulted in a chemical/physical change because _____

Demonstration 8: _____
I predict that a chemical/physical change will occur.
Observations: _____

_____
This demonstration resulted in a chemical/physical change because _____

Boom and Fizz
Student Lab Investigation Sheet

Question:
When vinegar is added to chalk, will the chalk undergo a physical change or a chemical change?

Background Information:

A *physical change* involves the alteration of a substance without changing the make-up of the substance. Evidence of a physical change could be a change in shape, form, volume, etc.

A *chemical change* involves the alteration of a substance that results in the production of a new substance. The original substance no longer exists in its previous form. Evidence of a chemical change could be a change in color, emission of gas and/or heat, dissolving, etc.

Hypothesis:
The chalk will undergo a chemical/physical change when it comes in contact with vinegar.

Materials:
1 petri dish, 1 piece of chalk, 1 small cup containing vinegar, 1 eye dropper, safety goggles

Procedure:
1. Make sure safety goggles are covering your eyes.
2. Place the chalk into the petri dish.
3. Use the eyedropper to remove a small amount of vinegar from the cup.
4. Place 10 drops of vinegar directly onto the chalk.
5. Record your observations.

Data/Observations:

Conclusion: Do you accept or reject your hypothesis? State your conclusion using support from your lab observations.

Critical Thinking:
Identify one chemical change and one physical change found in nature. Use supporting details to explain why the change is a chemical change and a physical change.

Teacher Assessment Tools

Demonstration Observation Sheet

The Demonstration Observation Sheet and student discussion will be used as a formative assessment. The teacher should provide immediate feedback during the discussion and allow students to master the concepts while relinquishing misconceptions.

Student Lab Investigation Sheet

The Student Lab Investigation Sheet will be used as a summative assessment. The students will demonstrate use of appropriate experimental design with consideration for rules, time, and materials required to solve a problem by working through the investigation. They must have a hypothesis, recorded observations, and a conclusion that is supported by data from the experiment.

Critical Thinking Rubric

In addition to the lab investigation, the students will need to answer the critical thinking question at the end of the lab. The following rubric can be used as a tool for assessment.

4 - The response correctly identifies both a chemical change and a physical change in nature and provides a detailed explanation for each change.

3 - The response correctly identifies both a chemical change and a physical change in nature and provides some explanation for each.

2 - The response correctly identifies one type of change and provides some explanation about the change.

1 - The response correctly identifies one type of change and provides little to no explanation about the change.

Goal 3 Standards Checklist

This can be observed during the discussion segment of the lesson and/or the lab investigation segment of the lesson. A class checklist is on the next page.

Boom and Fizz Name:	Yes	No
Demonstrated creative and critical thinking skills		
Efficiently used time and materials		
Worked cooperatively with others in an effective and positive manner		

Boom and Fizz
Goal 3 Standards Checklist

NAME	Demonstrated creative and critical thinking skills		Efficiently used time and materials		Worked cooperatively with others in an effective and positive manner	
	YES	NO	YES	NO	YES	NO
1.						
2.						
3.						
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