



Mission: What combination produces the most bubbles?

Age: 8+
Materials: \$19

Time: 30 min
(Set-up: 10 min | Activity: 15 min | Clean-up: 5 min)

NGSS Alignment of Bubble Battles Activity

The information below may not include every area that this activity can be linked to NGSS concepts

Disciplinary Core Ideas

PS1.A: Structure and Properties of Matter

- 2nd Grade
 - Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties.
- 5th Grade
 - Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects.
- Middle School
 - Substances are made from different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms.

Performance Expectations

- 2-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 5-PS1-1: Develop a model to describe that matter is made of particles too small to be seen.



Crosscutting Concepts

Patterns

- **Grade 3-5**
 - Patterns of change can be used to make predictions.
 - Patterns can be used as evidence to support an explanation.
- **Middle School**
 - Macroscopic patterns are related to the nature of microscopic and atomic-level structure.
 - Patterns can be used to identify cause and effect relationships.

Engineering and Science Practices

Planning and Carrying Out Investigations

- **Grade 3-5**
 - Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.
 - Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.
 - Make predictions about what would happen if a variable changes.
- **Middle School**
 - Conduct an investigation and/or evaluate and/or revise the experimental design to produce data to serve as the basis for evidence that meet the goals of the investigation.
 - Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions.
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Analyzing and Interpreting Data

- **Grade 3-5**
 - Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.
 - Analyze data to refine a problem statement or the design of a proposed object, tool, or process.
- **Middle School**
 - Analyze and interpret data to provide evidence for phenomena.
 - Analyze and interpret data to determine similarities and differences in findings.