

MiniFab Science Lab

In this new series from PBS North Carolina, Ava and friends explore the world of science through hands-on experiments. In the episode “Rotten Banana,” Ava and Elijah mix up “elephant toothpaste” to learn how molecules break apart and change form.

To learn more, visit pbsnc.org/MiniFab.



Elephant Toothpaste Experiment

Materials

- Safety goggles
- A clean 16-oz plastic soda bottle
- ½ cup 20-volume hydrogen peroxide liquid
- 1 tablespoon (one packet) dry yeast
- 3 tablespoons warm water
- 1 tablespoon liquid dish soap
- Food coloring
- Small cup

Instructions

Since the foam will overflow, do this experiment on a washable surface.

1. Safety first: Put on your goggles as hydrogen peroxide can irritate your eyes.
2. Ask an adult to carefully pour the hydrogen peroxide into the bottle.
3. Add 8 drops of food coloring.
4. Add dish soap and swish bottle around to mix it.
5. In a separate cup, combine warm water and yeast, mixing for 30 seconds.
6. Pour yeast mixture into the bottle and watch the foaminess begin.

Activity courtesy of Scholastic



NC DEPARTMENT OF
HEALTH AND
HUMAN SERVICES
Division of Child Development
and Early Education

Learning Goals

NC Foundations for Early Learning & Development (Pre-K)

Cognitive Development (CD)

- **CD-1:** Children use scientific inquiry and problem-solving skills.
Kids observe visual chemical reactions and explore cause and effect.
- **CD-2:** Children demonstrate knowledge of physical science.
Children witness how substances change form and link this to natural decomposition.

Approaches to Learning (APL)

- **APL-2:** Children actively seek to understand the world.
The result inspires curiosity and further exploration.
- **APL-4:** Children demonstrate creativity, persistence and problem-solving.
Combining ingredients and testing cause-effect scenarios build cognitive flexibility.

Language Development (LD)

- **LD-4:** Children communicate effectively.
Children describe what they see, ask questions and explain why changes happen.

Emotional & Social Development (ESD)

- **ESD-6:** Children develop relationships and social skills.
Working with peers fosters teamwork, turn-taking and shared excitement.

NC Standard Course of Study: K-3 Alignment—Science

Kindergarten

- **K.P.2.1:** Compare observable physical properties of different kinds of materials.
Students compare substances before and after the reaction.
- **K.P.2.2:** Classify objects by observable physical properties.
Use sensory observations to classify materials before and after decomposition.

Grade 1: Forces & Matter

- **1.P.2.1:** Understand the properties of solids and liquids.
Observe how liquids and solids behave differently and how materials form.

Grade 2: States of Matter/Decomposition

- **2.P.2.2:** Compare solids and liquids based on observable properties.
- **2.L.2.1:** Understand that organisms have life cycles.
Rotten bananas lead into a conversation about natural decay as part of life cycles.

Grade 3: Matter & Ecology

- **3.P.2.2:** Compare how heating and cooling affect states of matter.
Yeast and warm water trigger a catalytic reaction, changing the state of the mixture.
- **3.L.2.3:** Explain how decomposers help recycle nutrients.
The episode's visit to the NC Zoo links decomposition to real ecosystems.



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