

## Photo Description



This image shows a baking or cooking activity in progress with two bowls: one contains dry, brown ingredients (like flour or sugar mixed with spices) and a whisk, while the other holds a bright red liquid (likely food coloring or tomato sauce). A KitchenAid mixer and various baking supplies are visible on the wooden counter. This is a real-world example of combining different materials to make something new.

## Scientific Phenomena

**Anchoring Phenomenon:** When we mix different materials together (solids and liquids), they combine to create new mixtures with different properties.

**Scientific Explanation:** This image demonstrates that materials can be combined in different ways. When dry ingredients (powders, granules) are mixed together, they stay separate but occupy the same space. When liquids are added, the particles rearrange and blend, creating a new substance. This is a physical change—the individual materials don't transform into something completely different; they simply combine. Students can observe that the texture, color, and consistency change when materials mix, helping them understand that properties matter when combining things.

## Core Science Concepts

- \* **Mixtures:** When two or more materials are put together, they can make a mixture. The materials in a mixture can often be separated again.
- \* **Properties of Materials:** Different materials have different properties (color, texture, wetness/dryness). When we mix materials, some properties change and become visible in new ways.
- \* **Combining vs. Separating:** Materials can be mixed together and, in many cases, separated back into their original forms. For example, sand and water can be mixed, and then separated by filtering or evaporating.
- \* **Physical Changes:** Mixing is a physical change because the materials don't become brand new substances—they just combine in new ways.

### Pedagogical Tip:

For First Grade, focus on observable changes rather than molecular explanations. Use sensory language: "What do you see? What would it feel like? What color is it now?" This keeps the learning concrete and developmentally appropriate while building vocabulary for describing properties.

### UDL Suggestions:

**Multiple Means of Representation:** Provide actual materials to mix (flour, water, salt, food coloring) so students can see AND touch the changes. Use before/after pictures or anchor charts with photos showing dry ingredients separately, then mixed together.

**Multiple Means of Action & Expression:** Allow students to mix materials themselves (hands-on), draw pictures of what happened, or use a simple sorting activity to identify which items are mixtures and which are single materials.

**Multiple Means of Engagement:** Connect mixing to familiar, joyful activities: making playdough, cooking snacks, or creating art. Let students choose which safe materials they'd like to combine.

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### Discussion Questions

1. What happened when we mixed the dry ingredients together? (Bloom's: Remember | DOK: 1)  
This checks if students can recall what they observed.
2. How did the mixture look and feel different after we added the liquid? (Bloom's: Understand | DOK: 2)  
This asks students to describe changes in properties using evidence.
3. If we poured this mixture into a clear cup and left it sitting, what do you think might happen over time? (Bloom's: Analyze | DOK: 2)  
This encourages prediction based on prior knowledge and observation.
4. How could we separate this mixture back into its parts? (Bloom's: Evaluate | DOK: 3)  
This extends thinking to real-world problem-solving.

### Extension Activities

1. Edible Mixtures Tasting (with parent permission): Have students make simple, no-cook mixtures: mix cereal in yogurt, combine fruit in a bowl, or stir cocoa powder into milk. Discuss how the mixture tastes and looks different from the individual ingredients. Safety: Always check for allergies; keep activities hygienic.
2. Sink-or-Stir Sorting Game: Provide materials like rice, beads, water, oil, sugar, and salt. Ask students to predict which materials will mix with water ("Will it stir in?") and which will sink or float separately. Test predictions and record results on a simple chart with pictures.
3. Playdough Creation: Combine flour, salt, water, and food coloring to make playdough. While mixing, have students describe what's happening: "It's crumbly! Now it's sticky! Now it's smooth!" This sensory experience builds understanding that mixing changes how materials feel and look.

### NGSS Connections

Relevant Performance Expectation:

K-PS1-1: Plan and conduct investigations to provide evidence that vibrations make sound and that various materials can absorb sound, and that light can be reflected by a mirror, refracted by a lens, and absorbed by various materials. (Note: While this PE focuses on sound and light, the foundational understanding of materials and their properties is critical.)\*

1-PS1-1: Use observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. (This PE relates well to mixing and combining materials.)\*

Disciplinary Core Ideas:

- \* K-PS1.A (Structure and Properties of Matter): Materials can be perceived through the senses in different ways.
- \* 1-PS1.B (Types of Interactions): Objects may go through a sequence of changes when different materials interact.

Crosscutting Concepts:

- \* Properties of Materials
- \* Cause and Effect

### Science Vocabulary

- \* Mixture: When you put two or more materials together, they make a mixture.
- \* Ingredients: The different materials you use to make something (like flour, sugar, and eggs for a cake).

- \* Combine: To put things together to make something new.
- \* Properties: How something looks, feels, smells, or acts (like color, texture, or wetness).
- \* Separate: To take apart or pull things away from each other.
- \* Texture: How something feels when you touch it (bumpy, smooth, sticky, etc.).

## External Resources

### ### 📖 Children's Books

- \* Pancakes, Pancakes! by Eric Carle — Shows the ingredients and steps for making pancakes; wonderful visual for understanding how separate materials combine into a new food.
- \* The Snowy Day by Ezra Jack Keats — While not directly about mixtures, it shows ice (frozen water) as a material and how it changes when mixed with snow and touched.
- \* What Do You Do With a Kangaroo? by Merle Pein — Playful book about combining animals in funny ways; great for discussing how things change when put together.

### ### 📺 YouTube Videos

- \* "Mixing Ingredients" - Crash Course Kids (2:45)  
A colorful, simple introduction to what happens when you mix different materials. Shows clear before-and-after examples.  
<https://www.youtube.com/watch?v=oO2HclqhtYY>
- \* "States of Matter for Kids" - Kids Learning Videos (4:12)  
Uses everyday examples (like mixing juice and water) to show how materials interact. Bright visuals and child-friendly narration.  
<https://www.youtube.com/watch?v=KzbyJcp623A>

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Teacher Tip: This lesson naturally connects to kitchen science, art, and cooking activities. Consider partnering with a family science night where caregivers and students mix simple ingredients together—it builds community engagement and reinforces concepts at home!