

Vinegar and Baking Soda

By Angela Challis and Paul Nance



Grade 5
Core Concept/Science/Dance

Objective: *Physical changes* are about energy and states of matter. You can cause physical changes with forces like motion, temperature, and pressure. A physical change is when it changes in form but not what it is made of.

Grade 5 Core Curriculum Science: Standard 1:

Students will understand that chemical and physical changes occur in matter.

Objective 2: Identify the physical properties of matter (e.g., hard, soft, solid, liquid, gas)

Grade 4 Core Curriculum Dance:

Standard 2: The student will identify and demonstrate movement elements in performing dance.

Objective 1: Expand dance vocabulary with movement experiences in space.

Dance Activity: Music: *Happy*

Find a partner; make a shape that is connected, make different shapes that are always connected. This represents elements that make a substance, for example $\text{HC}_2\text{H}_3\text{O}_2$ =Baking soda.

Motion: When you move it around, it is still baking soda. Connect your shape and travel while skipping, again galloping, and next leaping.

Temperature: Make your shape expand and contract. It still has the same substance.

Pressure: Change your shape; it's the same substance.

Chemical changes happen on a molecular level. A chemical change is when two or more elements are combined and they react with each other and they change into new substances.

Dance Activity: In this experiment we have: reaction, release of gas, new substance, and change in the temperature.

Reaction: Stay with your partner. When I say reaction everyone spread out galloping, skipping, etc, until you are away from your partner. It is OK to get close to other dancers.



Release of gas: Jump and spin.

New substance: Now find a group. Make groups of 2, 3, or 4. You cannot be with the same partner that you had before.

Change in temperature: Change your levels from high to low, or low to high as you hold your shape as a new substance.