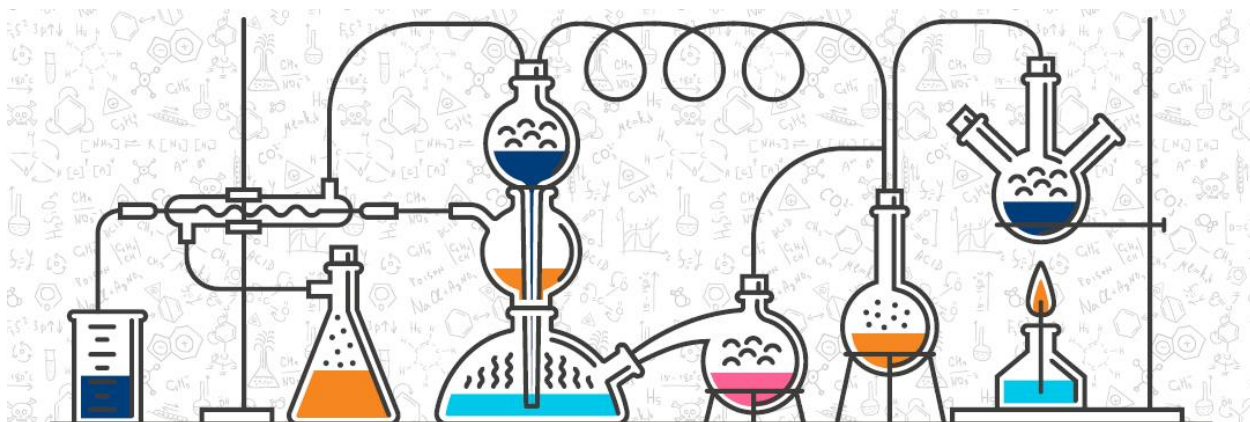


Mixing Substances



Theme: Creating new substances

Curriculum Area: Science

Activity: We will be looking at how combining different substances creates something new, or a reaction. In this activity, we will be conducting an experiment and mixing milk and vinegar to see how they react to each other. We will begin to learn that milk is negatively charged, and vinegar is positively charged. Adding an acid (vinegar) to the milk will make a *chemical* reaction. We will then use vinegar again, but this time we will add it to baking soda. From there, we will see the *chemical* reaction between these two substances.

Age: 5th grade (approx. 10-11 years of age)

Materials Needed:

1. Vinegar
2. 1 cup Milk
3. Baking Soda
4. 3 microwave-safe containers
5. Bowl
6. Sink
7. Measuring cups
8. Paper towels
9. Stove



Developmental Objectives: By participating in this activity, children will:

1. Develop knowledge on the combination of substances
2. Understand safe procedures while conducting a science experiment
3. Enhance knowledge on chemical and physical reactions

Procedure: *Milk & Vinegar*

1. Heat 1 cup of milk on stovetop
2. Add 4 teaspoons of vinegar to heat resistant mug
3. Pour steaming milk into mug with vinegar (adult assistance required)
4. Scoop out the curds onto paper towels to absorb remaining liquid
5. Create designs before the “plastic” dries up

Baking Soda & Vinegar

1. Put a cup of baking soda in the sink
2. Pour some vinegar in the cup
3. Watch the reaction

References: [CA NGSS Disciplinary Core Ideas Grade 5 - Science \(CA Dept of Education\)](#)

[Sculpted Science: Turn Milk into Plastic! - Scientific American](#)

Science Standard: 5-PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances