

# STEM LESSON (FIZZING RAINBOW)

**Age Level:** Preschool

**Subject(s) Area:** Science & Art

**Materials Needed:**

- Baking Soda
- Plate
- 1/4 cup measuring cup
- Vinegar
- Dropper
- Food coloring

## Standards:

-SCI.1.2 Recognize and inquire about simple cause and effect relationships (e.g., if you go outside when it is raining you will get wet).

## Objectives:

-By the end of the lesson, students will be able to recognize and inquire about simple cause and effect relationships by conducting an experiment where they have to arrange colors into a rainbow, create a simple chemical reaction, and examine the outcome.

## Learning Activities:

**Required Vocabulary:**

- color- blue, red, purple, yellow
- rainbow- an arc of colors
- baking soda- used for cooking and cleaning
- vinegar- sour-tasting liquid (used to make different foods)
- prediction- a guess of what is going to happen
- experiment- a scientific test

**Opening Element:** Get students excited about science, by preparing them to be scientists. Have them put on their lab coats (science aprons) and beaker-shaped nametags. Discuss science with them and why we do science. Go over safety procedures throughout the lesson and remind them that safety comes first. Then introduce the experiment we will be doing... "Bringing Rainbows to Life!"

**Instructional Methods:**

**Guided Practice Strategies:** Go over materials used within the experiment and their purpose. Then explain the procedure to the students. Students will receive a plate full of baking soda. They then will select the colors they would like to use for their rainbow. They will use fine motor skills to put drops of colors on one at a time creating a rainbow on top of the baking soda. After they create their rainbow they will then receive a cup of vinegar. They will use a spray bottle to apply vinegar to their colors

creating a chemical reaction that allows the color to fizz up and bring the rainbow to life. Prior to the experiment have students hypothesize what they think is going to happen.

**Independent Concrete Practice/Application:** I will allow students to conduct the experiment as I walk them through it step by step. I will remind them about safety procedures. I will further their learning by using open-ended questions to deepen their thinking. I will allow them to continue applying vinegar as they see fit. Following the lesson, students will have a basic knowledge of science, its importance, and why we do experiments. They will be able to take the problem solving and critical thinking skills they have learned and apply it to other areas of their development.

**Differentiation:**

- Use fewer or more colors depending on ability level
- Use large dropper if student is struggling to squeeze the food coloring
- Allow student to apply drops randomly if they are unable to create a rainbow
- Draw lines in the baking soda to provide a guide for students to put their drops of food coloring

**Reflective Questions:**

- What is science?
- What do scientists do?
- What is an experiment?
- Why do we conduct experiments?
- Can anyone predict what is going to happen?
- Were are predications right?

**Wrap-Up:**

- Ask students if the experiment went as they had predicted.
- Ask what they would do differently if they were to do the experiment again
- Ask them if there is any other experiments they would like to try
- Clean up and put away materials

## Assessment:

**Formative:** I will assess child based on observing how well child completes that task, achieves the expected results, and responds to questions.

**Summative:** There is no summative assessment for this lesson.