**Vernier Labquest/Replacement Investigation**

**Grade:** 6 **Kit:**  FOSS Mixtures and Solutions Investigation # 4

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**Guiding Question:**

1. How might the temperature of two substances mixed in water affect the fizz?
2. How does the temperature change with the reaction of two substances?

**Summary of Activity:**

Measure the Temperature as you mix two materials together.

1. Calcium Chloride + Baking Soda
2. Calcium Chloride + Citric Acid
3. Baking Soda + Citric Acid
4. Combine all three materials

**Science Standards:**

* + 1. Capturing information with tools. 6.3.17 Recognize & describe energy is a property
    2. Organize information in simple tables & graphs of many objects
    3. Read Simple tables & graphs produced by others 6.3.19 Investigate that materials maybe too small

6.2.8 Analyze & interpret a given set of findings to be seen

**Math Standards**

6.6.1 Organize and display single-variable data in appropriate graph

**Equipment Used:**

Per Group: Vernier Labquest and Temperature probe Consumable: Calcium Chloride

3 Plastic cups Baking Soda

Measuring Spoons Citric Acid

Stirring Sticks

Measuring Beaker

Water & Container to hold water

**Description of Procedures, Notes (Teacher Manual)**

1. Groups study the temperature in the two materials combined with water.
2. Use the LabQuest and probe to measure the temperature.
3. Set up the experiment as 4 stations where students can walk around in groups and do each experiment and record their findings
4. Set up experiments as directed under Investigation 4: Fizz Quiz on pages 8-14.
5. Provide students with Fizz Quiz Placemat (No. 14-Student Sheet)
6. Provide students with Fizz Quiz Observations (No. 15-Student Sheet)
7. **Extension Activity**
   1. Students put together their data in a graph
   2. Students compare their data with other groups

**Scientific Questions:**

Which combination of materials would have the highest temperature?

Which combination of materials would have the lowest temperature?

Was the temperature change constant or did it fluctuate?

How does the temperature over time compare/contrast between the four combinations?

Why do you think the temperature in some substances were warmer, while being colder in others?