**Vernier Labquest/Replacement Investigation**

**Grade:** 6 **Kit:**  FOSS Mixtures and Solutions Investigation # \_\_\_

**Author(s):**

Pamela Allen Tamela Anderson M. Bradley Lile

Luz Delia Ruiz-Monteso Katy Nykamp Jason Zook

**Guiding Question:**

**What gas byproducts are given off during a chemical reaction?**

**Summary of Activity:**

Measure the gases (CO2 & O2) found in two mixtures.

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.

**Math Standards**

6.6.1 Organize and display single-variable data in appropriate graph

**Equipment Used:**

Per Group: Vernier Labquest and BioChamber 2000 probe Consumable:

 3 Plastic cups

 Measuring Spoons

 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:**

Why do the percentages of gases change?

Which combination of materials would have the highest carbon dioxide or the lowest?

Which combination of materials would have the highest oxygen or the lowest?