

ACTIVITY

Question to Investigate

Does the temperature increase, decrease, or stay the same in the reaction between baking soda and vinegar?

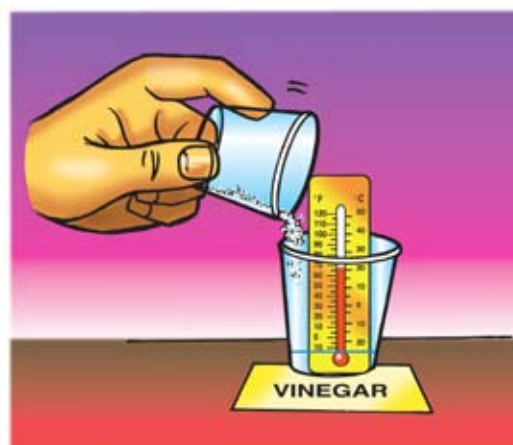


Materials

- Vinegar in a cup
- Baking soda in a cup
- Thermometer

Procedure

1. Place a thermometer in the vinegar. Read the thermometer and record the temperature on the activity sheet.
2. While the thermometer is in the cup, add all of the baking soda from your cup.
3. Watch the thermometer to observe any change in temperature. Record the temperature after it has stopped changing.



1. Did the temperature increase, decrease, or stay the same when you combined baking soda and vinegar?

2. What is the lowest temperature reached during your group's reaction?

Question to Investigate

Does the temperature increase, decrease, or stay the same in the reaction between baking soda solution and calcium chloride?

Materials

- Baking soda solution in a cup
- Calcium chloride in a cup
- Thermometer

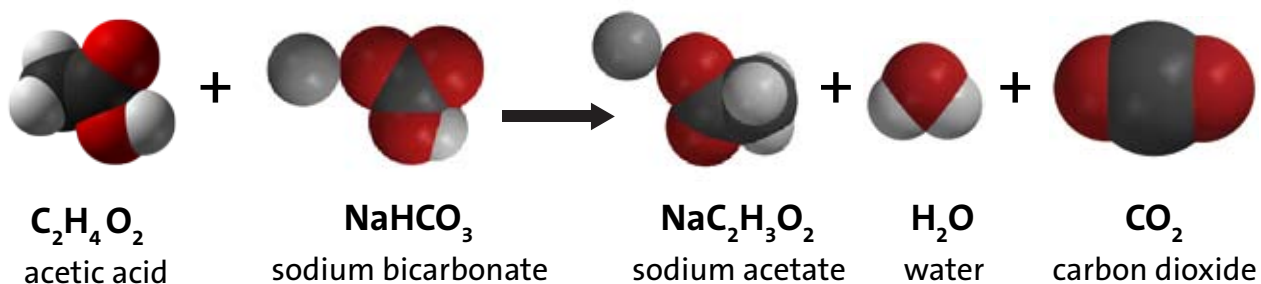
Procedure

1. Place a thermometer in the baking soda solution. Read the thermometer and record the temperature on the activity sheet.
 2. While the thermometer is in the cup, add all of the calcium chloride from the cup.
 3. Watch the thermometer to observe any change in temperature. Record the temperature when it stops changing.
3. Did the temperature increase, decrease, or stay the same when you combined baking soda solution and calcium chloride?
4. What is the highest temperature reached during your group's reaction?

EXPLAIN IT WITH ATOMS & MOLECULES

When the temperature of a chemical reaction decreases, the reaction is called an *endothermic* reaction. When the temperature of a chemical reaction increases, the reaction is called an *exothermic* reaction.

Vinegar and baking soda reaction



5. Is this an endothermic or exothermic reaction?
6. Draw an energy arrow on the reactant side and another on the product side to compare the amount of energy used and released during the reaction.
7. What do the arrows show about the amount of energy required to break the bonds of the reactants compared to the amount of energy released when the products are formed?

