

# **Do Now: Label left and right sides physical and chemical changes**

**Write the QUESTION and your answer.**

**Michael decides to bake bread one morning. He measures ingredients, mixes them together to make a dough, and cooks the dough in an oven. As the dough cooks, Michael observes the bread rising. Which of the following is evidence of the chemical change in Michael's bread-making process?**

- A. Sugar dissolving in the liquid batter.**
- B. The bread rising as carbon dioxide is released.**
- C. Water in the dough being released as water vapor.**
- D. The dry ingredients mixing with the wet ingredients.**

# Physical & Chemical Changes

## BENCHMARK:

**SC.8.P.9.2 Differentiate between physical changes and chemical changes. (Also assesses SC.8.P.9.1 and SC.8.P.9.3.)**

**WRITE THIS**

## ESSENTIAL QUESTION:

**How can you use evidence to determine if a change is physical or chemical?**



# PHYSICAL CHANGE

- **Physical Changes** result when there is a re-arrangement to the molecules of a substance. The molecules themselves stay the same.
- Ex: Changes in state of matter, shape, size, volume, mass, weight and density.



# CHEMICAL CHANGES

- **Chemical changes** occur when the molecules of a substance are broken apart and changed into a new substance with new properties.
- Ex: Bubbling and fizzing, light production, smoke and presence of heat.



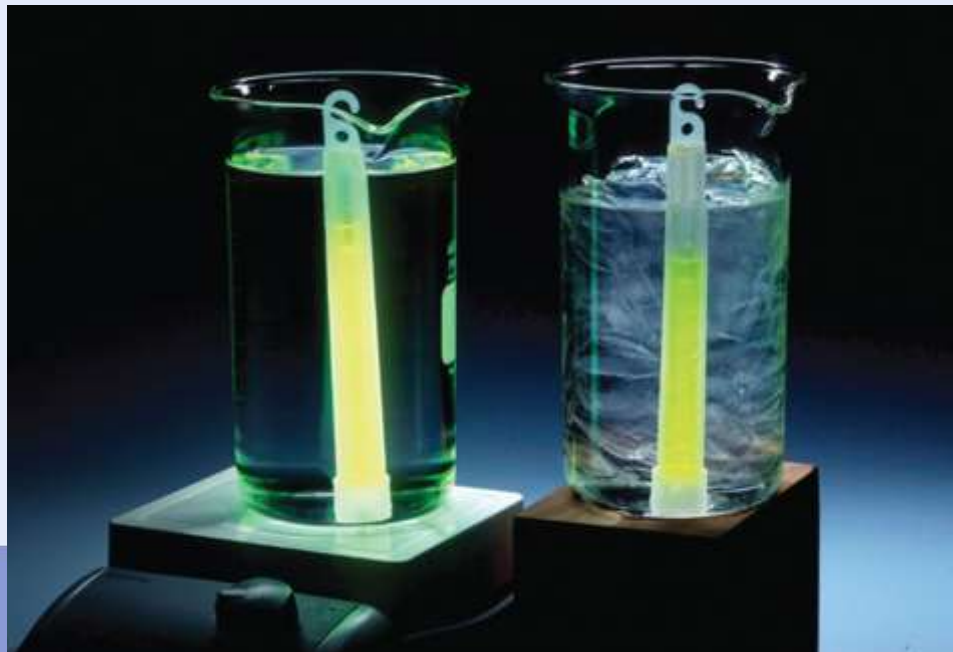


# Key Indicators of Each Type of Change

Physical Change Indicator	Chemical Change Indicator
<ul style="list-style-type: none"><li>• Can be reversed.</li><li>• NO New Substances formed!</li><li>• Ex: Change to State of Matter.</li></ul>	<ul style="list-style-type: none"><li>• NEW Substance Formed!</li><li>• Can't be reversed.</li><li>• Production of a <u>NEW</u> Color, Odor, Energy, Gas.</li></ul>

# How Temperature Affects Chemical Reactions

- The rate of a chemical reaction will **INCREASE** when heat is added.
- The rate of a chemical reaction will **DECREASE** when heat is removed.



# Law of Conservation of Mass

- Mass cannot be created or destroyed, just changed from one form to another.



Baking soda + vinegar  $\rightarrow$  salt + water + carbon dioxide gas  
3.861 g  $\rightarrow$  3.861 g



# BELL RINGER REVISITED

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# PENDA

- Go to <http://pendalearning.com>
- Site ID: 32207jlcp
- Username/Password: (Your s#....)
  - Yes, your S# for both username and password
    - YES, you include the s...



## EXIT TICKET

**How can you use evidence to determine if a change is physical or chemical?**