



Physical vs. Chemical Changes Lesson 1: *The Solve* Student Guide

I. Vocabulary Warm up

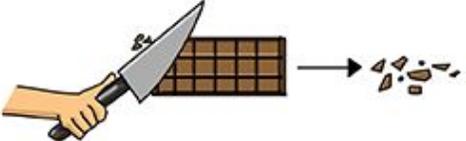
1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**. Note: Do not cut the cards at the dotted lines.
2. Fold the cards at the dotted lines.
3. Write the definition of the term on the inside of the card using the definitions below.
4. Use the clues from the Mind Map images, definitions, and vocabulary terms to place the cards in the correct location on the Mind Map, explaining your thinking to group members as you go.
5. When you're ready to glue or tape, raise your hand so you can check your Mind Map with your teacher.
6. Use glue or double-sided tape to connect the back of the vocabulary card to the correct place on the Mind Map.
7. Use your completed Mind Map to discuss these questions with your group:
 - a. Which cooking process(es) show a substance staying the same substance?
 - b. Which cooking process(es) show a substance changing into a new substance?
 - c. When you bake cookies in the oven, what changes do you notice between the dough and the finished cookies? Think about what you see, touch, taste, and smell.



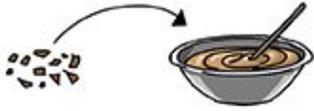


Physical and Chemical Changes Mind Map

1) Chop a chocolate bar into flakes

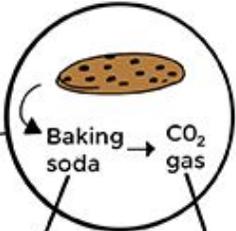


2) Mix chocolate flakes into the batter



3) Put into the oven and watch them bake!





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Physical vs. Chemical Changes Vocabulary Cards

Physical Reaction	Chemical Reaction	Product
Reactant		

Physical vs. Chemical Changes Vocabulary

- Chemical Reaction: A process that involves rearrangement of molecules into new molecules.
- Physical Change: A change in which the molecules are not altered to become a new substance.
- Reactant: A substance that undergoes change during a chemical reaction.
- Product: A substance that is made during a chemical reaction.
- Molecule: A group of atoms bonded together with specific chemical properties.
- Reversible: Able to be undone.



III. Exit Ticket: Check for Understanding

Complete the exit ticket below *or* you can take the quiz online!

Name: _____

Date: _____

1. Which of the following is NOT an indicator of a physical change?
 - a. A substance changes shape
 - b. A substance changes form
 - c. The change is easily reversible (it can change back)
 - d. A substance fizzes and bubbles
2. You're about to make macaroni and cheese! First, you boil a pot of water. The boiling water is an example of a:
 - a. Physical change
 - b. Chemical reaction
3. In a physical change, the molecules inside a substance _____ before and after.
 - a. Stay the same
 - b. Change
 - c. Vary between
 - d. Travel between
4. Toasting marshmallows over a campfire is an example of a:
 - a. Physical change
 - b. Chemical reaction
5. In a chemical reaction, the molecules in the substance _____ before and after.
 - a. Stay the same
 - b. Change
 - c. Vary
 - d. Travel