

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

I. Vocabulary Warm up

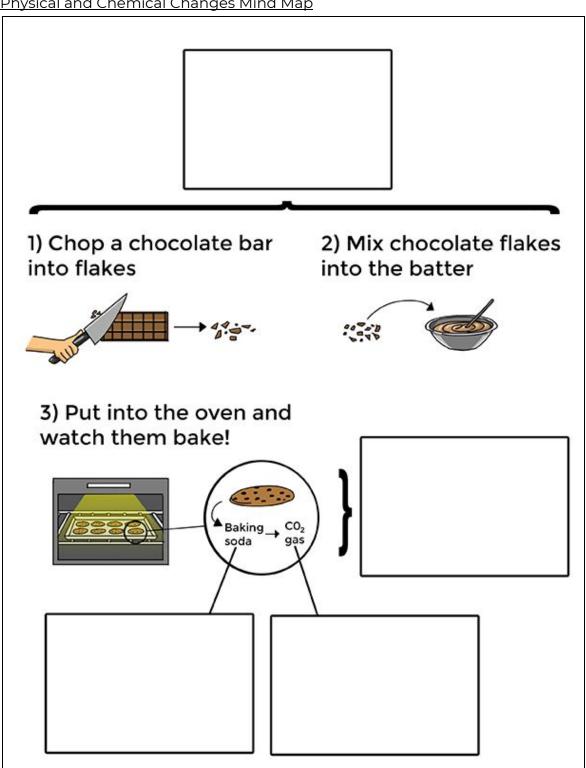
- Using the materials at your table, cut out your vocabulary cards along the **solid** lines. Note: Do not cut the cards at the dotted lines.
- 2. Fold the cards at the dotted lines.
- 3. Write the definition of the term on the inside of the card using the definitions below.



- 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





Physical 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.



II. Watch Mosa Mack

Either on your own, in a small group or as a class (your teacher will let you know), read or watch Mosa Mack's comic on Physical vs. Chemical Changes. Then, fill out the questions below. Include a page number or time code in your answer as evidence of where you found your answer.

Name	e: Date:	Date:		
<u>Episoo</u>	<u>de Questions</u>			
1.	Amir and Gracie left some evidence of breakfast behind. Luckily, some of it can be changed back. What does Mosa write down as clues that a substance will easily change back?	се		
2.	Where is the water in the pot going? Is it disappearing?			
3.	How does E. Mulsion, celebrity food scientist, define a physical change, and what examples does he give?			

4.	Why is unfrying the eggs impossible?
5.	As Mosa studies eggs and toast, what does she write down in her notebook as indicators of chemical reactions?
6.	How is lighting a match an example of a chemical reaction?
7.	How is the dissolving antacid tablet an example of a chemical reaction?
8.	What did Mosa figure out? Why can't they get back the eggs and the bread? Why can't they turn the pancakes back into the ingredients?

III. Exit Ticket: Check for Understanding

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

Name:		Date:	Date:		
1.	a. Asu b. Asu c. The	he following is NOT an indicator of a physical abstance changes shape abstance changes form change is easily reversible (it can change bac abstance fizzes and bubbles			
2.	boiling wat a. Phys	ut to make macaroni and cheese! First, you k ter is an example of a: sical change mical reaction	boil a pot of water. The		
3.	after. a. Stay b. Chai c. Vary	ral change, the molecules inside a substance of the same nge of between of between	ebefore an		
4.	a. Phys	narshmallows over a campfire is an example sical change mical reaction	of a:		
5.	after.	,	before and		