

## Two Kinds of Changes

Physical Change

A physical change occurs when the appearance of a substance changes, but chemically the substance is the same. The individual molecules do not change, and no new matter is formed. During some physical changes, matter simply changes from one state to another. Evaporating, melting, freezing, and sublimating are examples of physical changes in which matter changes from one state to another. During evaporation, a substance changes from a liquid to a gas. When a substance melts, it changes from solid to liquid. A substance that freezes changes from a liquid to a solid. During su blimation, a substance changes from a solid directly to a gas.

There are other types of physical changes. During some physical changes, an object's size or shape is altered. A physical change also occurs when substances are

mixed and something dissolves.

Chemical Change

Chemical change occurs when a chemical reaction takes place. The substances produced during a chemical reaction are different from the original substances. Energy is involved in all chemical reactions. Here are some signs that a chemical reaction has an place:

A solid precipitate forms at the bottom of a test tube.

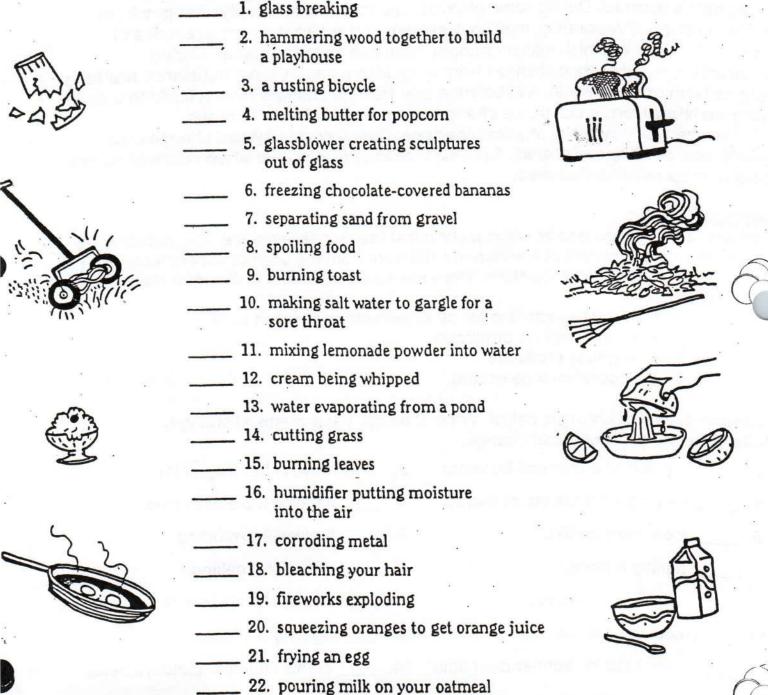
Examine the list of changes below. Write C before each chemical change.

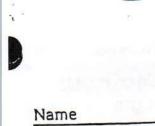
- · Heat or light is produced.
- · A gas is produced.
- · A color change occurs.

W	Irite P before each physical change.	
	1 erosion of a riverbed by water	2 leaves changing color
	3 carving a statue out of marble	4 sanding a piece of wood
*	5 ice cream melting	6 fireworks exploding
	7 baking a cake	8 chocolate melting
N	a flashbulb flashes	10 vinegar is mixed with baking soda
	11 cooking waffles	12 lighting a match
3	mothballs disappear over time	14 plants undergo photosynthesis
	5 a red mark appears after a bee sting	16 a drop of hydrochloric acid on marble produces carbon dioxide gas
	7)	

## TWO WAYS TO CHANGE

melting ice sculpture ... a spectacular bonfire ... a cake baking in the oven ... a milkshake in ne making ... an explosion ... all of these involve changes in matter. Some are physical changes changes in shape, color, or state) and others are chemical changes (changes involving chemical eactions). Which are which? For each change described below, write P for physical change or C for hemical change. Be ready to explain your choices.





Basic Skills/Physical Science 6-8+



Name	
Date	Science Homework
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For each of the following statements, decide whether a chemical or physical change has taken place. Underline the key word or words that helped you to make your decision.

A newspaper yellowed after a few weeks.		
2. Acid causes a limestone rock to fizz.	_	
3. Red meat turned brown after it cooked.	_	
4. Folding a piece of paper.	- -	
5. Cooking an egg in a hot pan.	-	
6. Putting acid into your sink to dissolve hairballs.	-	
7. Chopping a piece of wood in half with an ax.	-	
8. Biting into an apple.	-	
9. Exercising and using sugars and fats stored in your body.		
10. Flattening a lump of clay with your fist.	-	
11. Lighting the wood you chopped in half on fire.		
12. Digesting your dinner.	- *	
13. Tearing a piece of cloth.	• #	
14. Taking an antacid tablet.	171	



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## HOMOGENEOUS VS. HETEROGENEOUS MATTER

Name	

Classify the following substances and mixtures as either homogeneous or heterogeneous. Place a  $\sqrt{}$  in the correct column.

		HOMOGENEOUS	HETEROGENEOUS
1.	flat soda pop		
2.	cherry vanilla ice cream		
3.	salad dressing		
4.	sugar		
5.	soil		
6.	aluminum foil		
7.	black coffee		345
8.	sugar water		
9.	city air		
10.	paint		
11.	alcohol	-	
12.	iron		
13.	beach sand		
14.	pure air	74	
15.	spaghetti sauce	12 I	