

**PHYSICAL PROPERTY**

1. observed with senses
2. determined without destroying matter

**CHEMICAL PROPERTY**

1. indicates how a substance reacts with something else
2. matter will be changed into a new substance after the reaction

PART A.

On the 1st line - Identify the following as a chemical (C) or physical property (P):

P 1. blue color

P 2. density

C 3. flammability (burns)

P 4. solubility (dissolves)

C 5. reacts with acid

C 6. supports combustion

P 7. ductility

P 8. melting point

C 9. reacts with water

P 10. hardness

P 11. boiling point

P 12. luster

P 13. viscosity

C 14. Toxicity

Identify the following as physical (P) or chemical (C) changes.

**PHYSICAL CHANGE**

1. a change in size, shape, or state
2. no new substance is formed

**CHEMICAL CHANGE**

1. a change in the physical and chemical properties
2. a new substance is formed

P 1. NaCl (Table Salt) dissolves in water.

C 2. Ag (Silver) tarnishes.

P 3. An apple is cut.

P 4. Heat changes H<sub>2</sub>O to steam.

C 5. Baking soda reacts to vinegar.

C 6. Fe (Iron) rusts.

P 7. Alcohol evaporates .

P 8. Ice melts.

C 9. Milk sours.

P 10. Sugar dissolves in water.

C 11. Wood rots.

C 12. Pancakes cook.

C 13. Grass grows.

P 14. A tire is inflated.

C 15. Food is digested.

P 16. Paper towel absorbs water.

PART B.

Part C: True (T) or False (F)

1.	<u>F</u>	Changing the size and shapes of pieces of wood would be a chemical change.
2.	<u>F</u>	In a physical change, the makeup of matter is changed.
3.	<u>T</u>	Evaporation occurs when liquid water changes into a gas.
4.	<u>T</u>	Evaporation is a physical change.
5.	<u>F</u>	Burning wood is a physical change.
6.	<u>F</u>	Combining hydrogen and oxygen to make water is a physical change.
7.	<u>T</u>	Breaking up concrete is a physical change.
8.	<u>F</u>	Sand being washed out to sea from the beach is a chemical change.
9.	<u>F</u>	When ice cream melts, a chemical change occurs.
10.	<u>F</u>	Acid rain damaging a marble statue is a physical change.

### Part C

Read each scenario. Decide whether a physical or chemical change has occurred and give evidence for your decision. The first one has been done for you to use as an example.

	Scenario	Physical or Chemical Change?	Evidence...
1.	Umm! A student removes a loaf of bread hot from the oven. The student cuts a slice off the loaf and spreads butter on it.	Physical	No change in substances. No unexpected color change, temperature change or gas given off.
2.	Your friend decides to toast a piece of bread, but leaves it in the toaster too long. The bread is black and the kitchen is full of smoke.	CHEMICAL	- COLOR CHANGE - NEW SOLID - CARBON CRUST
3.	You forgot to dry the bread knife when you washed it and reddish brown spots appeared on it.	CHEMICAL	- KNIFE IS RUSTING - COLOR CHANGE
4.	You blow dry your wet hair.	PHYSICAL	- STILL YOUR HAIR - JUST DRY (H <sub>2</sub> O HAS EVAPORATED)
5.	In baking biscuits and other quick breads, the baking powder reacts to release carbon dioxide bubbles. The carbon dioxide bubbles cause the dough to rise.	CHEMICAL	- CHEMICAL REACTION AS STATED. - NEW SUBSTANCE - CO <sub>2</sub> - GAS BUBBLES ARE PRODUCED
6.	You take out your best silver spoons and notice that they are very dull and have some black spots.	CHEMICAL	- SPOONS HAVE TARNISHED - COLOR CHANGE
7.	A straight piece of wire is coiled to form a spring.	PHYSICAL	- STILL WIRE - ONLY SHAPE HAS CHANGED.
8.	Food color is dropped into water to give it color.	PHYSICAL	- THE COLOR OF THE WATER AND FOOD COLORING HAS <u>NOT</u> CHANGED!!
9.	Chewing food to break it down into smaller particles represents a <u>PHYSICAL</u> change, but the changing of starch into sugars by enzymes in the digestive system represents a <u>CHEMICAL</u> change.	BOTH	- CHEWING CHANGES SIZE (PHYSICAL) - ENZYMES IN SALIVA AND STOMACH CHANGES THE STARCH INTO SUGARS.
10.	In a fireworks show, the fireworks explode giving off heat and light.	CHEMICAL	- COLOR CHANGE - NEW GASSES ARE PRODUCED (SMOKE) - LIGHT IS GIVEN OFF  - TEMPERATURE CHANGE.