

Welcome!!

Please grab your ISN, a new TOC and calendar, and have a seat!! Please make your TOC look like mine, and begin your SEPT/OCT calendar with Sept 18th.

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Strand 4

TITLE: elements & Their Properties

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WWK (pg 33)

1. physical property - a characteristic that can be measured or observed without changing the composition.

2. chemical property - the ability of a substance to combine or react or change into something else.

3. law of conservation of mass - matter is neither created nor destroyed during a chemical reaction - It is conserved.

$$\text{Mass}_r = \text{Mass}_p$$

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Physical Properties

Chemical Properties



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Physical Properties

- can be measured or observed w/o changing the substance composition

Extensive depend on the amount of the substance that is present. * mass, length, volume *

Intensive never change, do not depend on the amount present. * color, scent, texture, taste, critical points, density

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Chemical Properties

- how well something combines or changes into something else
- cannot be observed w/o changing the substance.
- pH, flammability, corrosive abilities, rustabilities

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Physical Changes

- alters the look of a substance, but not the composition.
- matter - phase changes
(gas → liquid → solid)
- size changes
- dyeing hair or clothing
- melting, vaporizing, condensing, boiling, freezing

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Chemical Changes



- substance changes into something completely new
- formation of a new solid, liquid or gas.
- temperature change or uncommon color change
- decompose, rot, rust, oxidize, ferment, burn.

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Physical Changes

◆-----◆
Chemical Changes

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Homework

PHYSICAL AND CHEMICAL PROPERTIES AND CHANGES

Name _____

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

Identify the following as a chemical (C) or physical property (P):

- | | |
|---------------------------------|----------------------------|
| _____ 1. blue color | _____ 8. melting point |
| _____ 2. density | _____ 9. reacts with water |
| _____ 3. flammability (burns) | _____ 10. hardness |
| _____ 4. solubility (dissolves) | _____ 11. boiling point |
| _____ 5. reacts with acid | _____ 12. luster |
| _____ 6. supports combustion | _____ 13. odor |
| _____ 7. sour taste | _____ 14. reacts with air |

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

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

- | | |
|--|--------------------------------------|
| _____ 1. NaCl (Table Salt) dissolves in water. | _____ 9. Milk sours. |
| _____ 2. Ag (Silver) tarnishes. | _____ 10. Sugar dissolves in water. |
| _____ 3. An apple is cut. | _____ 11. Wood rots. |
| _____ 4. Heat changes H ₂ O to steam. | _____ 12. Pancakes cook. |
| _____ 5. Baking soda reacts to vinegar. | _____ 13. Grass grows. |
| _____ 6. Fe (Iron) rusts. | _____ 14. A tire is inflated. |
| _____ 7. Alcohol evaporates. | _____ 15. Food is digested. |
| _____ 8. Ice melts. | _____ 16. Paper towel absorbs water. |

Physical and Chemical Changes

Part A

Can you recognize the chemical and physical changes that happen all around us? If you change the way something looks, but haven't made a new substance, a **physical change (P)** has occurred. If the substance has been changed into another substance, a **chemical change (C)** has occurred.

1.	An ice cube is placed in the sun. Later there is a puddle of water. Later still the puddle is gone.
2.	Two chemicals are mixed together and a gas is produced.
3.	A bicycle changes color as it rusts.
4.	A solid is crushed to a powder.
5.	Two substances are mixed and light is produced.
6.	A piece of ice melts and reacts with sodium.
7.	Mixing salt and pepper.
8.	Chocolate syrup is dissolved in milk.
9.	A marshmallow is toasted over a campfire.
10.	A marshmallow is cut in half.

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