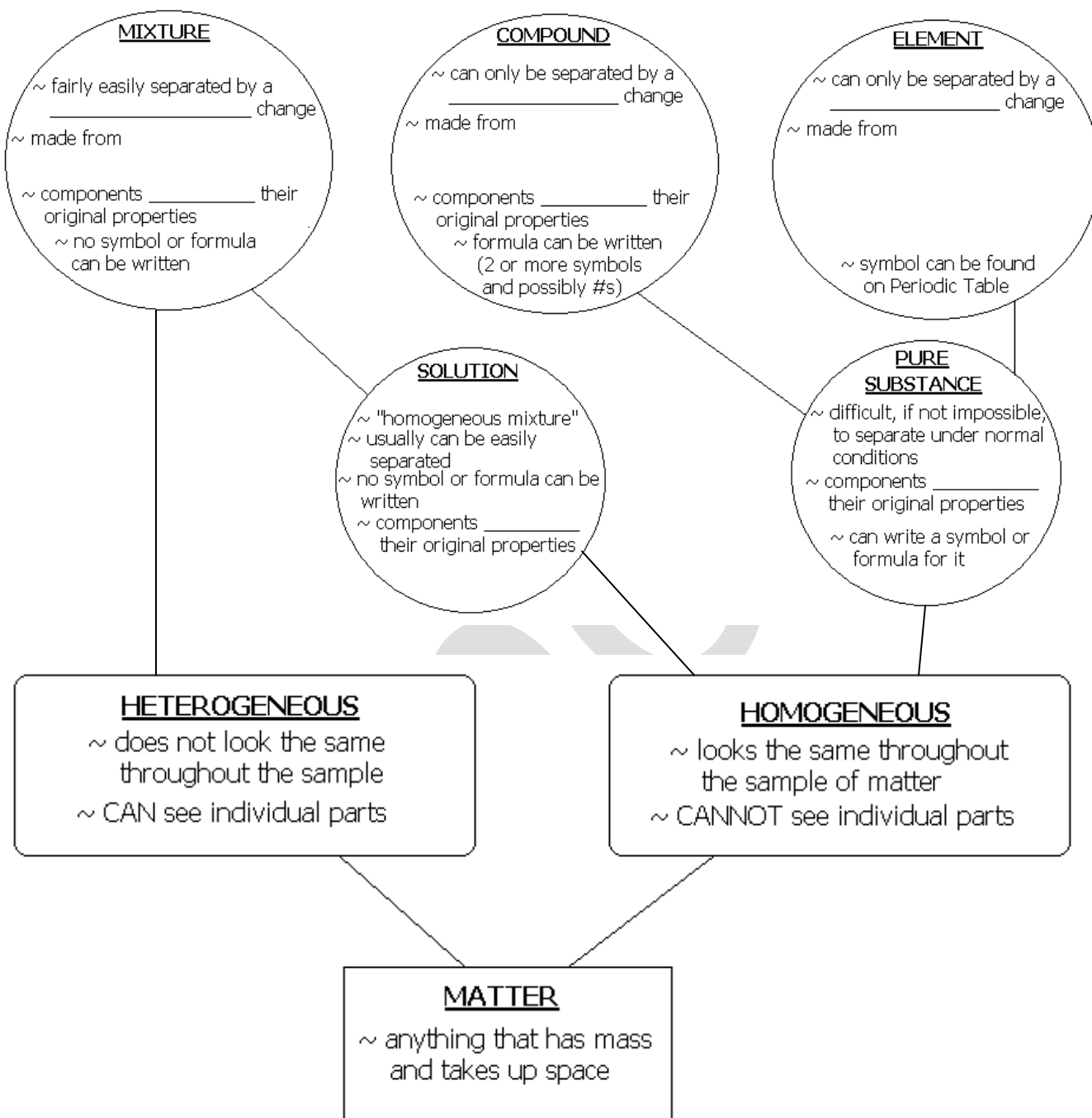


**ELEMENTS & THEIR SYMBOLS NOTES**

H	hydrogen	Ni	nickel
He	helium	Cu	copper
Li	lithium	Zn	zinc
Be	beryllium	As	arsenic
B	boron	Se	selenium
C	carbon	Br	bromine
N	nitrogen	Kr	krypton
O	oxygen	Rb	rubidium
F	fluorine	Sr	strontium
Ne	neon	Ag	silver
Na	sodium	Cd	cadmium
Mg	magnesium	Sn	tin
Al	aluminum	I	iodine
Si	silicon	Xe	xenon
P	phosphorus	Cs	cesium
S	sulfur	Ba	barium
Cl	chlorine	Pt	platinum
Ar	argon	Au	gold
K	potassium	Hg	mercury
Ca	calcium	Pb	lead
Ti	titanium	Bi	bismuth
Cr	chromium	Rn	radon
Mn	manganese	Fr	francium
Fe	iron	Ra	radium
Co	cobalt	U	uranium

**CLASSIFICATION OF MATTER NOTES**



**HOMOGENEOUS VS. HETEROGENEOUS MATTER WORKSHEET**

Classify the following as either homogeneous or heterogeneous.

- |                                 |                            |
|---------------------------------|----------------------------|
| 1. flat soft drink (no bubbles) | 2. air (with smog)         |
| 3. chocolate chip ice cream     | 4. paint                   |
| 5. Italian salad dressing       | 6. alcohol                 |
| 7. sugar                        | 8. iron                    |
| 9. soil                         | 10. beach sand             |
| 11. aluminum foil               | 12. pure air               |
| 13. black coffee                | 14. chunky spaghetti sauce |
| 15. sugar water                 |                            |
- 

**PURE SUBSTANCES VS. MIXTURES WORKSHEET**

Classify the following as pure substances or mixtures.

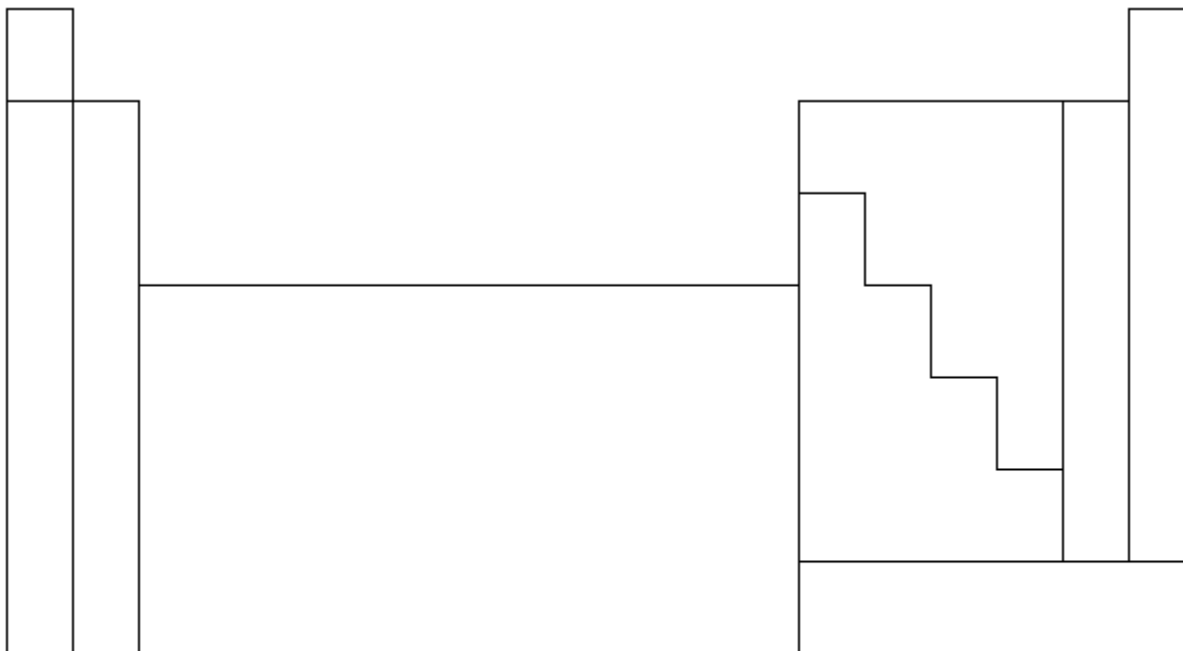
- |  |                             |
|--|-----------------------------|
| 1. sodium  | 2. iron                     |
| 3. water   | 4. salt water               |
| 5. soil  | 6. chocolate chip ice cream |
| 7. coffee  | 8. nitrogen                 |
| 9. oxygen  | 10. eggs                    |
| 11. isopropyl alcohol (C <sub>3</sub> H <sub>7</sub> OH) | 12. blood                   |
| 13. carbon dioxide                                       | 14. table salt              |
| 15. cake batter  | 16. nail polish             |
| 17. air  | 18. milk                    |
| 19. chicken noodle soup                                  | 20. soda                    |
| 21. acetone (C <sub>2</sub> H <sub>6</sub> O)            |                             |

**CLASSIFICATION OF MATTER WORKSHEET**

Check the appropriate categories for the substances listed below. All substances will have a check in more than one column.

	<u>Substance</u>	<u>Heterogeneous Matter</u>	<u>Homogeneous Matter</u>	<u>Pure Substance</u>	<u>Solution</u>	<u>Element</u>	<u>Compound</u>	<u>Mixture</u>
1	lead metal							
2	table salt (NaCl)							
3	Kool-Aid drink							
4	vegetable soup							
5	oxygen gas							
6	distilled water							
7	concrete							
8	pure gold							
9	brass metal							
10	flat 7-Up soda							
11	raw egg (cracked open)							
12	air							
13	pure iron							
14	iron rust (Fe <sub>2</sub> O <sub>3</sub> )							
15	soil							
16	baking soda (NaHCO <sub>3</sub> )							

PERIODIC TABLE BASICS




PERIOD:

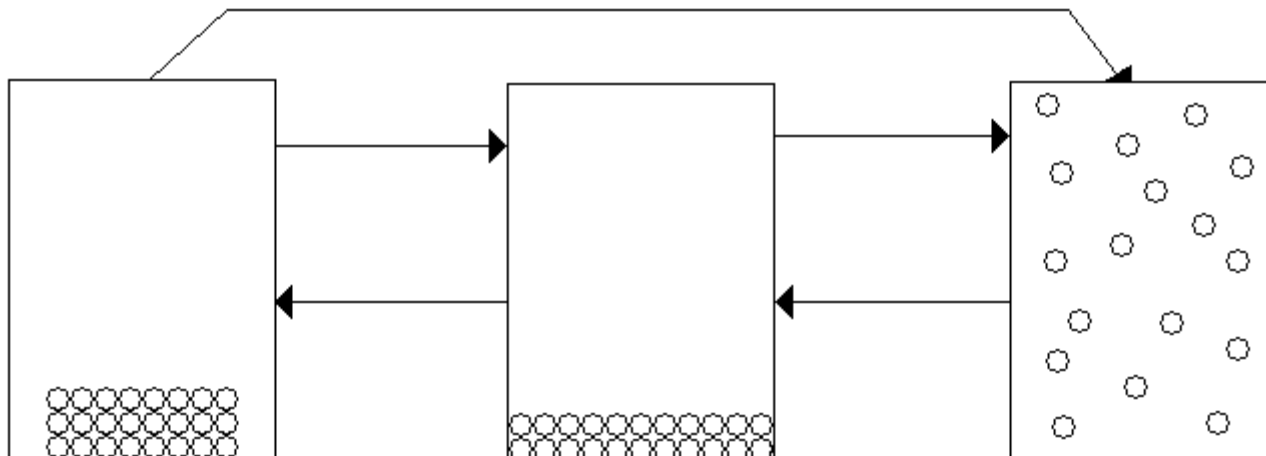
GROUP:

PROPERTIES OF METALS:

PROPERTIES OF NONMETALS:

METALLOIDS:

**PHYSICAL AND CHEMICAL CHANGES**



\_\_\_\_\_

~ \_\_\_\_\_ shape                      ~ \_\_\_\_\_ shape                      ~ \_\_\_\_\_ shape

~ \_\_\_\_\_ volume                      ~ \_\_\_\_\_ volume                      ~ \_\_\_\_\_ volume

PHYSICAL CHANGES:

CHEMICAL CHANGES:

~ Key words that indicate a CHEMICAL change:

~ CHEMICAL REACTIONS

Example: Propane burns in oxygen to produce carbon dioxide and water.

~ NUCLEAR REACTIONS:

Fission-

Fusion-

**PHYSICAL VS. CHEMICAL CHANGES 1 WORKSHEET**

Classify the following as being a chemical or a physical change.

1. Sodium hydroxide dissolves in water.
2. Hydrochloric acid reacts with potassium hydroxide to produce a salt, water, and heat.
3. A pellet of sodium is sliced in two.
4. Water is heated and changed to steam.
5. Potassium chlorate decomposes to potassium chloride and oxygen gas.
6. Iron rusts.
7. When placed in water, a sodium pellet catches on fire as hydrogen gas is liberated and sodium hydroxide forms.
8. Evaporation.
9. Ice melting.
10. Milk sours.
11. Sugar dissolves in water.
12. Wood rotting.
13. Pancakes cooking on a griddle.
14. Grass growing in a lawn.
15. A tire is inflated with air.
16. Food is digested in the stomach.
17. Water is absorbed by a paper towel.

**PHYSICAL VS. CHEMICAL PROPERTIES & CHANGES 2 WORKSHEET**

Part 1 - Indicate whether each of the following describes a chemical or a physical property.

1. Sulfur is a bright yellow solid.
2. Sulfur has a low melting point.
3. Sulfur causes silver to tarnish.
4. Aluminum is very malleable.
5. Monuments made of copper corrode in acid rain.
6. Copper is a good conductor of electricity.

Part 2 - Classify the following as chemical or physical properties.

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| 7. color                        | 8. solubility (dissolve in water) |
| 9. reactivity                   | 10. expansion                     |
| 11. flammability                | 12. melting point                 |
| 13. odor                        | 14. rusting                       |
| 15. porosity (absorb water)     | 16. reacts with oxygen            |
| 17. stability (like reactivity) | 18. density                       |
| 19. ductility                   | 20. conductivity                  |

Part 3 - Indicate whether these changes are chemical, physical, or nuclear.

- |   |                                    |
|---|------------------------------------|
| 21. Lead reacts with acid in a car battery. | 22. fusion of hydrogen into helium |
| 23. Gasoline burns in a car engine.         | 24. liquefying oxygen              |
| 25. Frost forms on a car window.            | 26. digestion of food              |

**UNIT 2 - MATTER & CHANGE**

- 27. sublimation of moth balls
- 29. formation of clouds from water vapor.
- 31. formation of dew on grass
- 33. melting of ice cream
- 35. exploding of dynamite
- 37. fission of uranium
- 28. tarnishing of silver
- 30. magnetizing steel
- 32. reacting sodium and water
- 34. dissolving sugar in water
- 36. burning sugar to produce carbon
- 38. burning of gasoline

**Unit 2 Review Worksheet**

**Identify each of the following changes as physical (P), chemical (C), or a nuclear (N).**

- 1. You cut your hair.
- 3. Baking soda reacts with vinegar and forms a gas.
- 5. An aspirin is crushed into fine powder.
- 7. Fission of uranium into xenon and strontium.
- 9. Diamonds are used to scratch glass.
- 11. A piece of paper is crumpled up.
- 13. Food spoiling.
- 15. A candle melting.
- 17. Salt dissolves in water.
- 19. A piece of copper is cut in half.
- 20. A sugar cube is ground up.
- 22. Ethyl alcohol boils at 79°C.
- 24. Fireworks explode.
- 2. Making a peanut, pretzel and cereal mixture.
- 4. A piece of metal is bent in half.
- 6. Copper turns green when exposed to the environment.
- 8. Baking cookies.
- 10. A tree burns to form ashes.
- 12. Water freezes to form ice.
- 14. A candle burning.
- 16. Fusion of hydrogen atoms into helium.
- 18. Hydrochloric acid reacts with magnesium to produce hydrogen gas.
- 21. Ethyl alcohol evaporates.
- 23. Paper burns.
- 25. Alka-Seltzer gives off CO<sub>2</sub> when added to water.

**Determine if each of the following is a mixture or a pure substance. If it is a mixture, identify if the mixture is homogeneous or heterogeneous. If it is a pure substance, identify if the substance is an element or a compound.**

- 1. Sugar (C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>)
- 4. Ocean water
- 7. Coffee
- 10. Pencil
- 13. Pepperoni Pizza
- 2. Liquid nitrogen
- 5. Methane gas (CH<sub>4</sub>)
- 8. Lucky Charms® cereal
- 11. Hot fudge sundae
- 14. Mercury
- 3. Apple juice
- 6. Gasoline
- 9. Wood
- 12. Silver
- 15. Big Mac®

**Locate these areas on the Periodic Table.**

- 1. Halogens
- 4. Alkaline Earth Metals
- 7. Inner Transition Metals
- 2. Lanthanide Series
- 5. Transition Metals
- 8. Actinide Series
- 3. Noble Gases
- 6. Alkali Metals
- 9. Metalloids