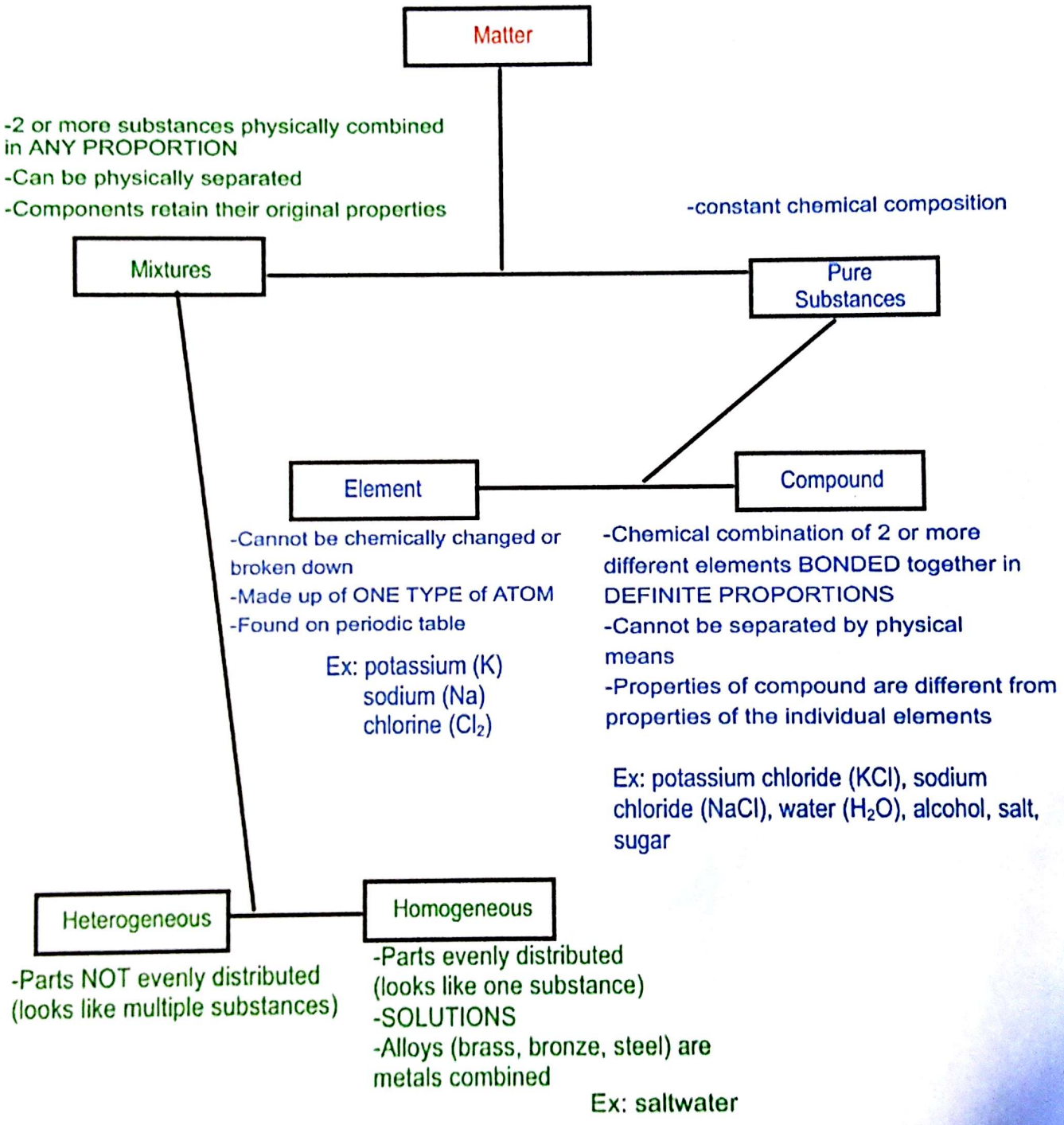
Name KEY _____Period_____

UNIT 2 REVIEW – DESCRIBING MATTER

For the test you need to understand the following terms, but you also need to be able to categorize matter into these terms. Please define each category in the dotted boxes. Include examples of each.



Compare the STATES OF MATTER by filling in the table.

	Solid	Liquid	Gas
Shape (definite or indefinite?)	Definite	Indefinite	Indefinite
Volume (definite or indefinite?)	Definite	Definite	Indefinite
Molecular Speed (fast, medium, slow?)	Slow	Medium	Fast
Distance between molecules (small, medium, large?)	Small	Medium	Large

What is matter? Anything that takes up MASS & VOLUME

Give an example of something measureable that is NOT matter: light, heat, energy, sound, electricity

What is a solution? A homogeneous mixture. Evenly distributed mixture.

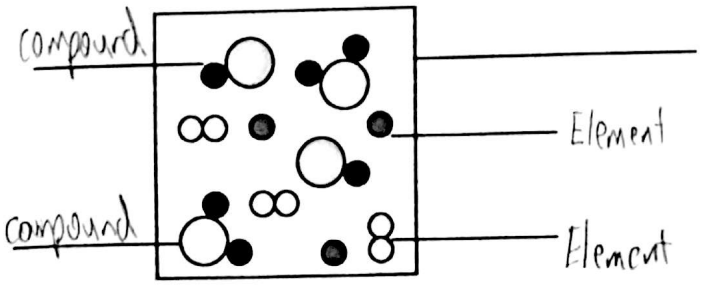
What is a suspension? Is it a heterogeneous or homogeneous mixture?
A H.E. mixture w/ large particles which will eventually settle out.

What is a colloid? Is it a heterogeneous or homogeneous mixture?
A H.E. mixture where the small particles will not settle out.

Check each choice that is ALWAYS true.

	Pure Substance	Element	Compound	Type of Mixture?
sugar	✓	X	✓	X
Salt water	X	X	X	H.O.
air	X	X	X	H.O.
Chex - Mix	X	X	X	HE
milk	X	X	X	HE-C
Vinaigrette dressing	X	X	X	HE-S
copper	✓	✓	X	X
brass	X	X	X	HO & alloy
Snicker's bar	X	X	X	HE

Label each portion of the diagram as an element, compound, or mixture.



Homogeneous mixture & combination of different gases

Element

Element

Match the following separation techniques with the appropriate way it is used. The following separation techniques are meant to only <u>separate mixtures via physical means</u>.

Magnetic attraction Sieving Filtering Evaporation Distillation
Decanting Centrifuging Chromatography Crystallization

1. Distillation. Separation of mixtures based on differences in conditions (ex. Boiling point) required to change the phase.
2. Centrifuging. Separation solids from liquids based on densities. Uses centrifugal force to separate denser substance at the bottom and lighter substances at the top.
3. Evaporation. Separation of a DISSOLVED solid from a solution. Example: boiling salt water, leaving behind salt when water is no longer there.
4. Sieving. Separate particles of different sizes by passing through a mesh or a net.
5. Filtering. Separate a solid from a liquid. The liquid passes through the filter paper leaving behind the solid particles.
6. Chromatography. Separation of mixtures on the basis of differences in their affinity for a stationary and a mobile phase.
7. Decanting. Separation of mixtures that leaves sediments in the bottom of the container by draining off the liquid.
8. Magnetic Attraction. Separate particles based on magnetic properties.
9. Crystallization. Separation of a solid- liquid mixture through the formation of solid crystals from a homogeneous solution.

The ONLY way to separate a compound (pure substance) into elements is by <u>HEATING or ELECTROLYSIS</u>.

How do you know a PROPERTY is <u>physical or chemical</u>?

physical- observed or measured

chemical - able to change the substance (reactivity, flammability, etc.)

What are some examples of chemical and physical PROPERTIES?

physical - color, odor, density, conductivity, taste | chemical - oxidation, tarnish, reactivity, combustibility

How do you know a CHANGE is physical or chemical?

physical - No new substance is produced | chemical - NEW substance produced. Irreversible.

What are some examples of chemical and physical CHANGES?

physical - Cutting wood, tearing paper, boiling, dissolving | Chemical - Burning, H_2 gas explodes

Law of definite proportion:

Compounds always contains its component elements in fixed ratio

Name four indicators of a chemical change.

1. Evolution of light / heat
2. Gas production
3. Solid precipitate formed
4. Unexpected color change

If 25.0 g of NaOH is added to 33.0 g HCl and 17.0 g of H_2O is produced, what mass of NaCl is also produced?

NaOH	+	HCl	-->	H_2O	+	NaCl
25.0g		33.0g		17.0g		41.0g