

Name _____ Date _____ Block _____

C F A #1 - R E V I E W

You will have approximately 5 minutes at each station to record your answers. You may use your notebook as a reference. WORK EFFICIENTLY & STAY FOCUSED!
 'YOU GOT THIS!'

Station 1: Atoms and Elements

1. What are the 3 subatomic particles of an atom?

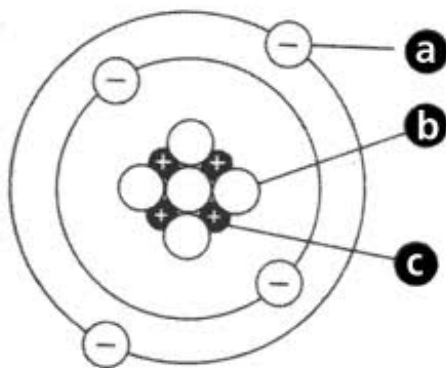
Particle Name			
Particle Charge			

2. Complete the paragraph below with the following words:

molecules protons electrons neutrons same patterns

The three subatomic particles that make up atoms are _____, _____ and _____. All of the _____ atoms make up elements. Atoms can be arranged as well defined _____ or repeating crystal _____.

3. Label a, b and c, of the atomic structure below with the proper terms (hint: look @ #1)



4. Which statement best describes the structure of an atom?

- A. protons and electrons grouped together in a random pattern
- B. protons and electrons grouped together in an alternating pattern
- C. a core of protons and neutrons surrounded by electrons
- D. a core of electrons and neutrons surrounded protons

5. Which of the following best describes the nucleus of a carbon (C) atom?

- A. a collection of electrons and neutrons
- B. a collection of protons and neutrons
- C. a group of neutrons only
- D. a group of protons only

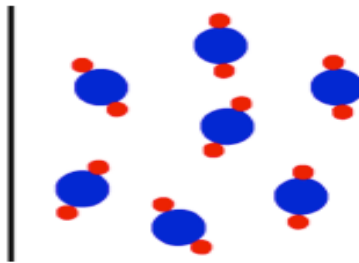
Station 2: Compounds and Mixtures

1. **True or False:** A compound is made up of two or more chemical elements chemically combine. _____

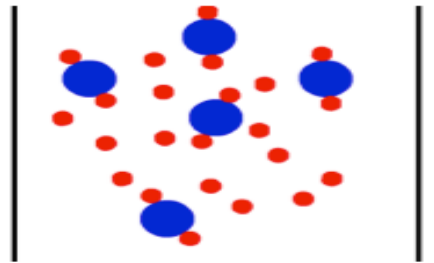
2. Which of the following images correctly illustrates a compound (circle your response)?



A



B



C

3. Use the following words to complete the sentences:

heterogeneous

chemically

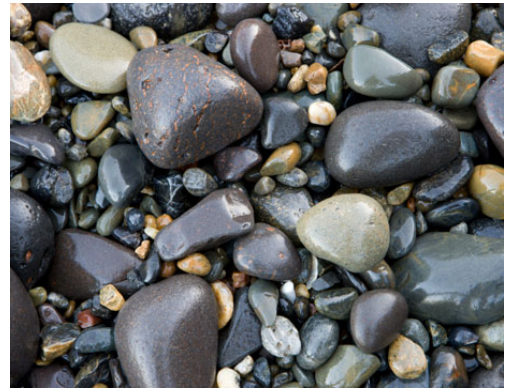
homogeneous

mixtures

When 2 or more elements _____ combine, they form compounds. If elements or compounds combine physically, they form _____.

There are two types of mixtures: _____ and _____ mixtures.

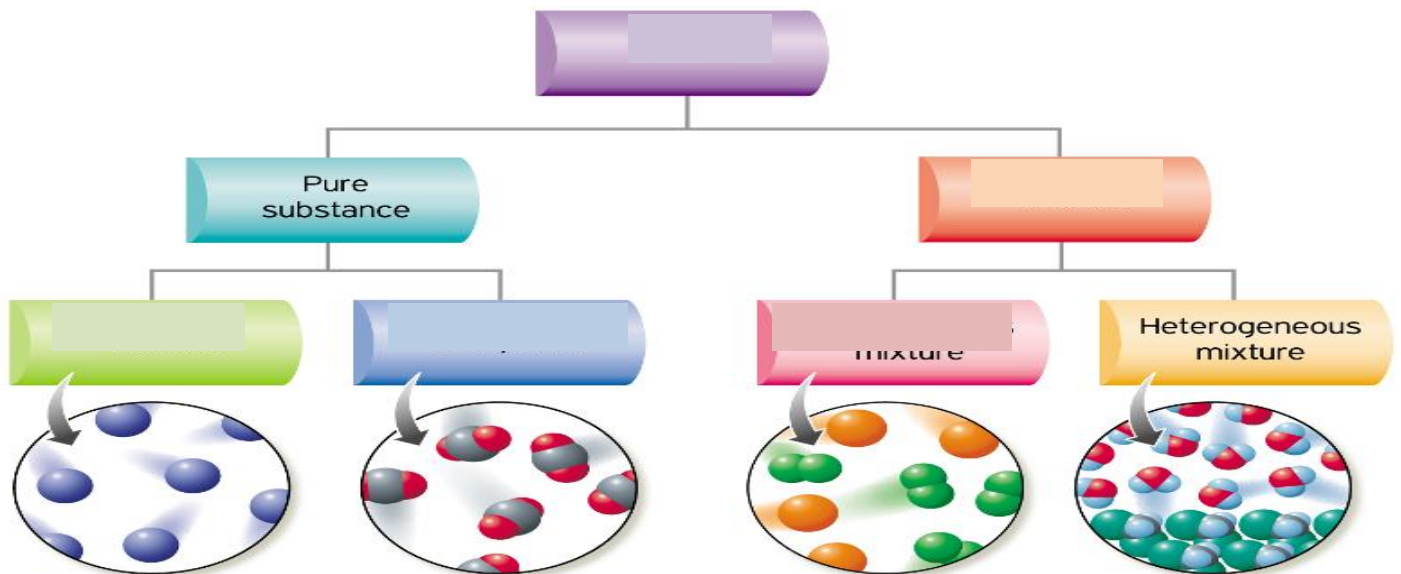
4. The image to the right can be classified as what type of mixture? _____



5. Explain why a substance like kool-aid or sweet tea is considered a homogeneous mixture.

6. Complete the chart below with the following terms

Element	Mixture	Compound	Homogeneous mixture	Matter
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Station 4: Physical Properties + Physical Changes

1. What is a physical change? _____

2. True or False: Physical changes may be reversible

3. True or False: A new substance (chemical makeup/matter) is created during a physical change.

4. Describe the process of a solid ice cube changing into water and then into water vapor. What physical changes take place? Explain.

5. What are 5 physical properties that can be observed about matter?

1. _____

4. _____

2. _____

5. _____

3. _____

6. Sort the following

Polarity	Density	Solubility	Shape	Size	Length	Luster
Volume	Temperature	Crush	Melt	Freeze	Boil	Texture
Melting point		boiling point		conductivity		

PHYSICAL PROPERTIES	PHYSICAL CHANGES

7. What is the difference between a physical change and a physical property?

Station 5: Chemical Properties + Chemical Changes

1. What is the definition of a chemical property? _____

2. List 4 examples of chemical properties

1. _____

3. _____

2. _____

4. _____

3. What can be absorbed or produced as the result of a chemical reaction? _____

4. What are 4 ways to chemically change a substance

1. _____

3. _____

2. _____

4. _____

5. What is the difference between a chemical property and a chemical change?

Classify the following as chemical changes or chemical properties

	Chemical Change	Chemical Property
A bicycle rusting		
Flammability of a blanket		
Toxicity of sodium		
Burning of wood		
Sodium reacting with chlorine		
Reactivity with other elements		

Station 6: Synthesizing Properties & Changes

1. How is a chemical change different from a physical change?

2. Classify the following as physical changes or chemical changes (put a check or a star).

Change Type	Physical	Chemical
Rusting		
Boiling		
Freezing		
Burning		

3. Classify the following:

EXAMPLE	PHYSICAL PROPERTY	PHYSICAL CHANGE	CHEMICAL PROPERTY	CHEMICAL CHANGE
Water is heated and changed into steam.				
Flammability				
Density				
Wood burns resulting in a pile of ash.				
Melting point				

4. Create ONE visual example for each of the following boxes

Physical Property	Physical Change
Chemical Property	Chemical Change

Station 7: Law of Conservation of Mass

THE LAW OF CONSERVATION OF MASS

According to the Law of Conservation of Mass, "matter cannot be created nor destroyed, only transferred from state to state". That said, the mass of the reactants will equal the mass of the products.

1. Using the information above, which statement is true?

- a. The mass of reactants is greater than mass of products
- b. The mass of reactants is less than mass of products
- c. The mass of reactants is sometimes greater and sometimes lesser than products.
- d. The mass of reactants is equal to mass of products.

2. Which of the following "typically" has more mass in a chemical reaction? The least mass in a chemical reaction? (write your answers below)

solids

liquids

gases

3. In a closed container, a student combined baking soda and vinegar. The mass at the beginning of the experiment was 15g of baking soda and 50mL of vinegar. What should the mass at the end of the experiment be?

- a. 15 g/mL
- b. 50 g/mL
- c. 35 g/mL
- d. 65 g/mL

4. An experiment took place in an open test tube. At the beginning of the experiment mass of the reactants was 95 g/mL. At the end of the experiment the mass was 75 g/mL. What is a possible explanation for this?

- a. Measurements were not recorded correctly
- b. A gas was produced
- c. A solid was produced
- d. A liquid was produced.

5. If Jose began an experiment about the Law of Conservation of Mass, which type of container would be best to use if he wanted accurate measurements for reactants before an experiment and products after an experiment?

a. a closed container

b. an open container

Station 8: Balancing Chemical Equations

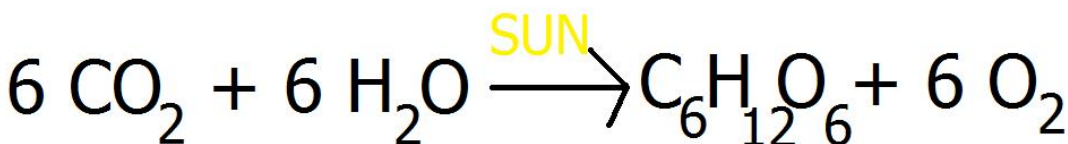
Balancing chemical equations is tricky. You need to make sure you have the same number of elements on both sides of the equation (remember...Law of Conservation of Mass). Let's start with the basics.

1. Look at this chemical equation. Label the *REACTANTS* and *PRODUCTS* (hint: flashcards!)



NOTE: the arrow means "yields" (aka forms, creates, makes).

2. Try this one (label ALL the reactants and ALL the products).



3. Now, when checking to see if an equation is balanced, there must be the same "number" for each letter on BOTH SIDES. If there is a big number in front of a letter, you'll multiply that by the little number behind a letter.

Check to see if the equation above is balanced.

Reactants Side
of C _____
of O _____
of H _____

Products Side
of C _____
of O _____
of H _____

*don't worry if you don't understand this just yet - we'll practice MUCH more next week!

LASTCALL

Can you accurately define + give examples of these words? If so, YOU'RE SET FOR CFA #1

Physical property	Physical change	Density	Solubility
Polarity	Atom	Element	Proton
Compound	Neutron	Group (family)	Mixture
Electron	Non-reactive	Non-metal	Periods
Reactive	Metal	Metalloid	Solids
Liquids	Gas	Atomic mass	Atomic Number