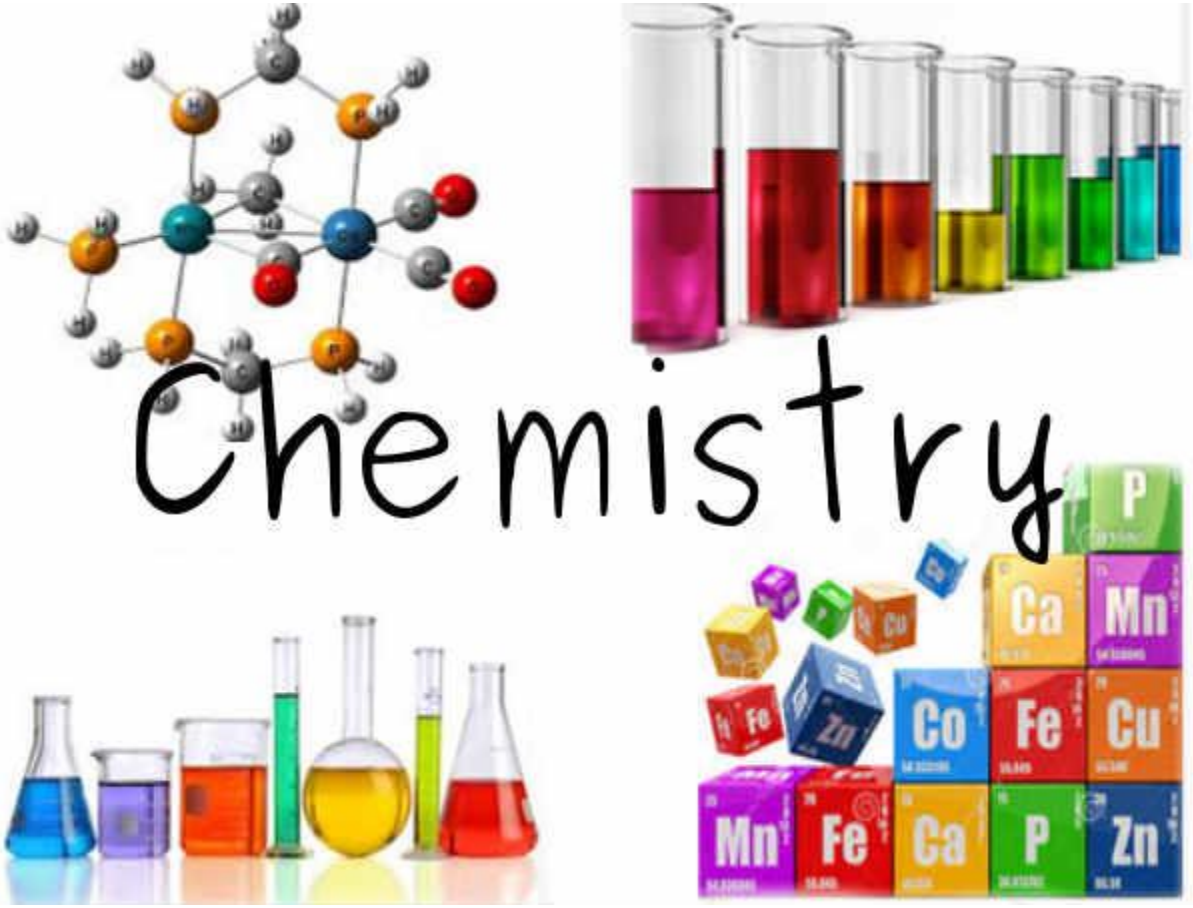
LT #5 I can organize and classify matter.

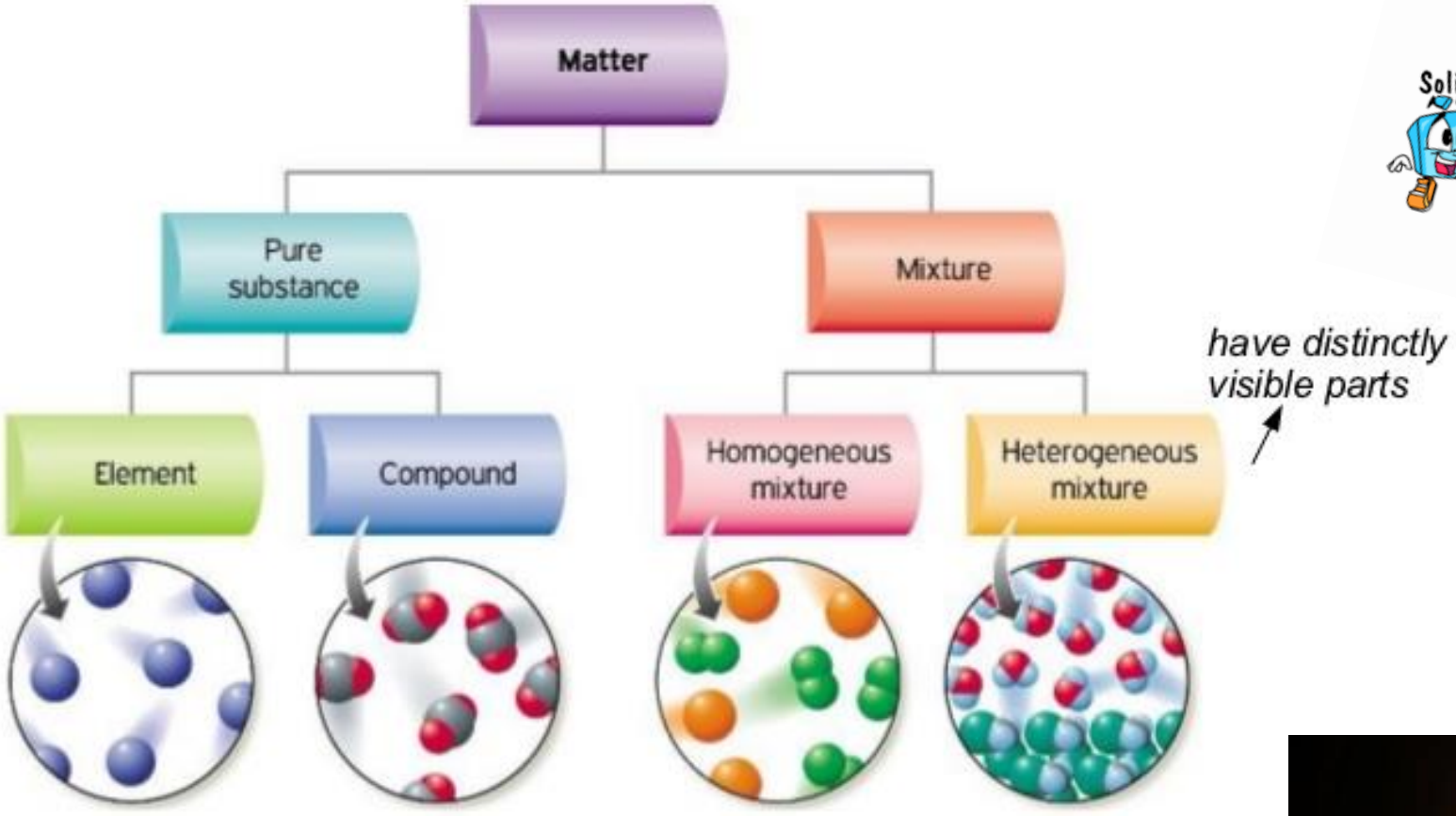


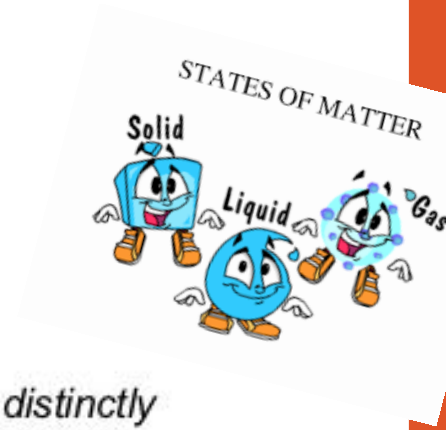
https://www.acs.org/content/acs/en/careers/college-to-career/video.html

the study of the composition, structure, and properties of matter and the changes it undergoes

What is matter?

- **Matter** is anything that has mass and takes up space.





- Energy is NOT matter!!!

Examples

Matter	Energy
• GO TO Smartboard File	

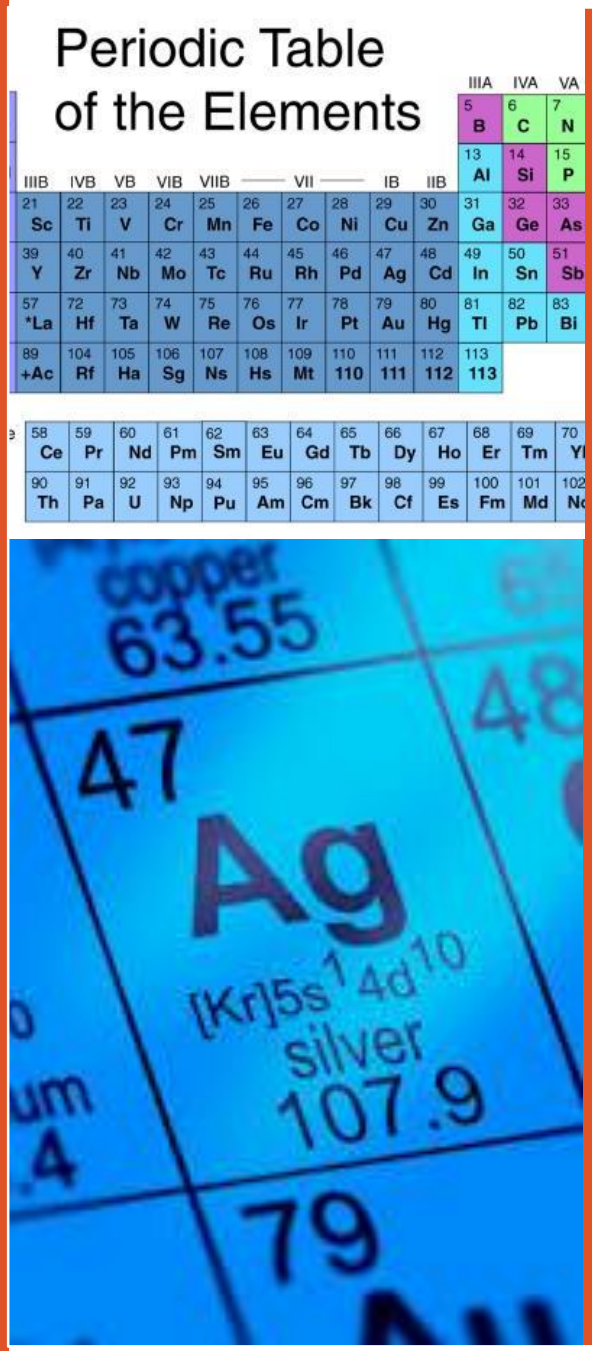
Let's see what you already know!

PAGE 7 – Do you think it is substance (element/compound) or mixture? **Place an X in the correct column.**

Type of Matter	Substance	Mixture
1. chlorine		
2. water		
3. soil		
4. sugar water		
5. oxygen		
6. carbon dioxide		
7. rocky road ice cream		
8. alcohol		
9. pure air		
10. iron		

PURE SUBSTANCES

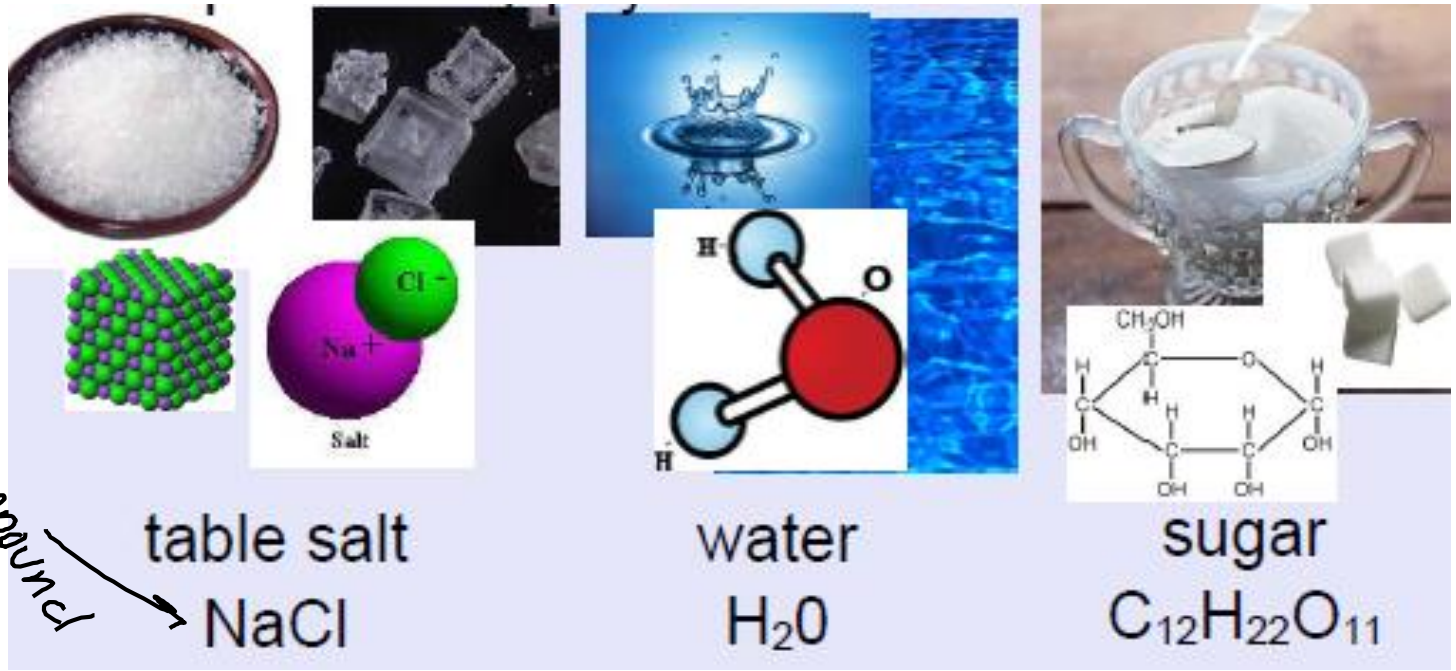
- Has a fixed composition
- Every sample of a given pure substance has exactly the same:
  - Characteristic properties
  - Same composition



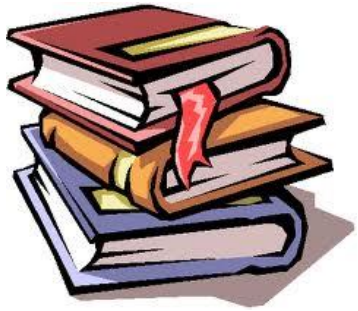
ELEMENT

- a substance that cannot be separated or broken down into simpler substances by chemical means
- Pure substance with all the same atoms (smallest constituent unit of ordinary matter that has the properties of a chemical element)
- Use unique chemical symbols to represent
- Found on the periodic table

- **COMPOUND**
  - a substance made up of atoms of two or more *different* elements joined by chemical bonds
  - cannot be broken down into simpler components be physical means
  - use chemical formulas to represent
  - In fixed proportions



Word Analogy



- Each word represents something different. With only three letters, you can represent several unique things or ideas.
- If you were to break up all of the words in your favorite book, you would be left with large piles of only 26 letters. The English alphabet allows you to construct thousands of words from just 26 letters. Each word represents something different. You combine those words to form sentences.

T A E

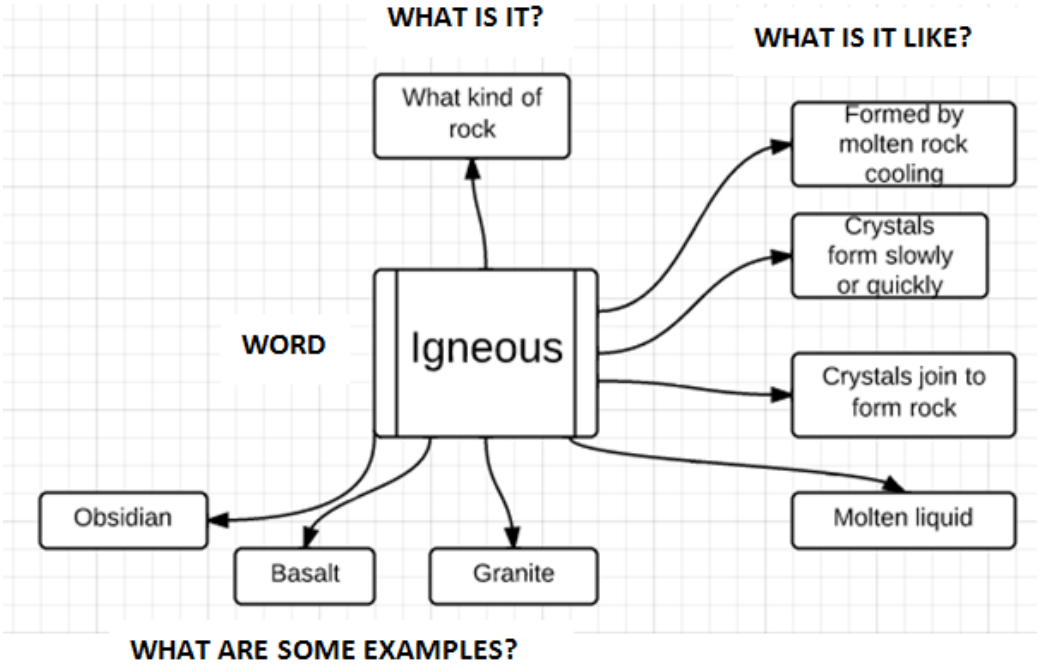
tea
ate
pat

Similarly…

If you were to break down all of the matter in the universe, you would be left with approximately 100 different types of atoms. We call those different types, elements. We can then construct thousands of compounds from just those 100 elements. Each compound has its own characteristics. We can then react those compounds together in chemical reactions

Activity - Concept of Definition – PAGE 4

- *With your partner, create a "Concept of Defn" chart for each of the following terms:* ***compound AND element***
- Even though you are working together, everyone should write down all of the concept defns.
- Cannot use examples in notes



Ice Cream Analogy

Recap – Next Day

- Imagine going to an ice cream store. Let's say that they have 31 different flavors of ice cream AKA Baskin Robbins. Those are the elements (different flavors), the things that I have available to build my ice cream dish from.
- The smallest amount of ice cream that the store will sell to me is a scoop; this is an atom.
- If I want I can put together 2 or more different flavored scoops of ice cream together, this is a compound.

Create Own Analogy for ATOM, ELEMENT, COMPOUND

- Work with your table.
- Be ready to share out.

MIXTURE

- Not pure
- 2+ elements or compounds NOT chemically combined
- Can be separated by physical means
- Displays the properties of the pure substances it makes up

Two Types of Mixtures

Heterogeneous

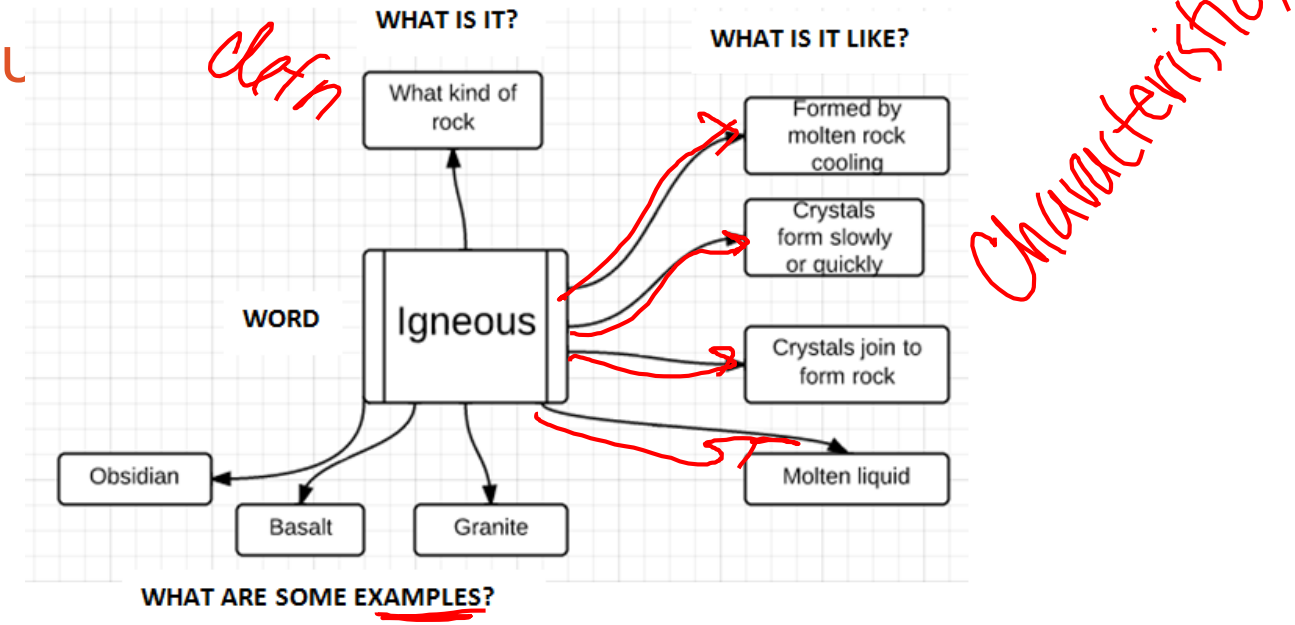
- Composition is NOT uniform throughout
- Ex: chicken noodle soup, oil and vinegar based dressing

Homogeneous

- Composition is uniform throughout
- Ex: stainless steel, brewed tea, diluted soln of hydrochloric acid, air

Activity - Atomic Structure Concept of Defn (p.6)

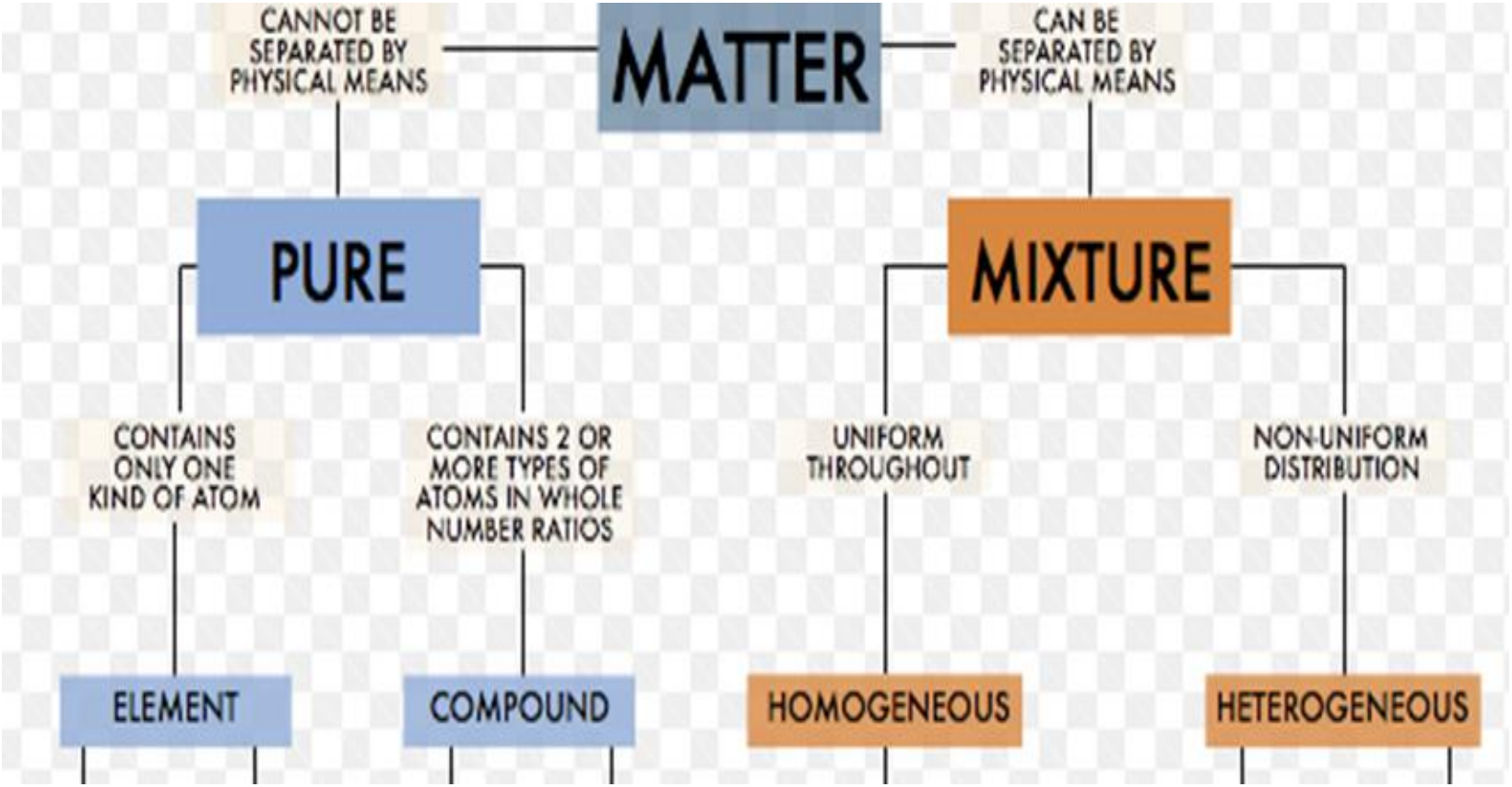
- *With your partner, create a "Concept of Defn" chart for* ***mixtures***
- *Homogenous and Heterogenous Mixtures should be in the What Is It Like*
- Even though you are working together, everyone should write down all of the concept defns.
- Cannot u



Activity - Visuals

- PAGE 6
- Draw a visual to help strength your understanding of each vocab term.

Next Day Recap/Wrap Up



Nuts and Bolts Activity

Page 7

Annotate Poem

Finish Page 7

Safety

Mixture – Pre Lab