DIFFERENCES BETWEEN PURE SUBSTANCES AND MIXTURES.

1. **Brainstorming**

a) What does pure substances mean? Give examples.

b) What does mixtures mean? Give examples.

c) Which states of matter have pure substance or mixture?

d) Do you think all mixtures have to have visible substances?

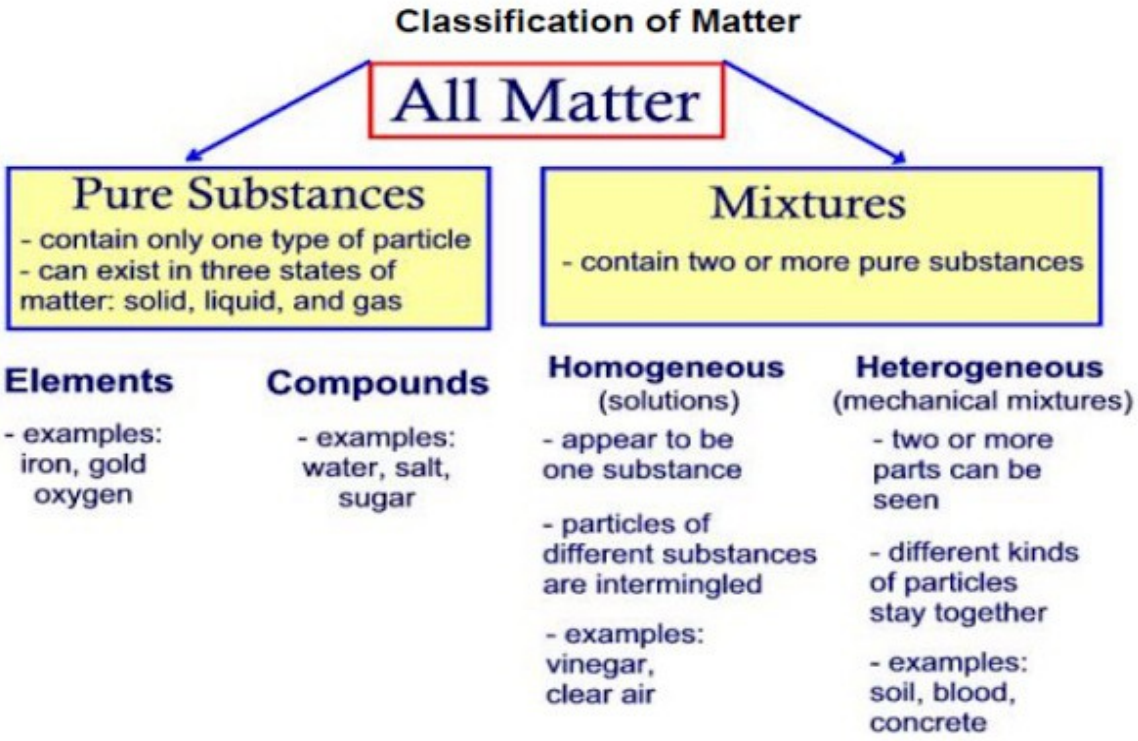
2. **Learning outcomes**

- How to differentiate between elements and compounds
- How to differentiate between homogeneus and heterogeneous mixtures
- How to differentiate between pure substance and mixtures

3. **Content language**

Pure substance	separate	fixed proportions
Mixture	properties	change
Single element	different form	formed
Compound	exothermic	higher, lower
Energy	homogeneus	combinated
Melts	heterogeneous	boils
Temperature	particle	

4. **Model with scaffolding language**



MIXTURES VS. COMPOUNDS

	COMPOUNDS	MIXTURES
DEFINATION	It is formed by the chemical combination of atoms of the elements.	Mixture is formed by the simple mixing up of the substances.
PROPERTIES	In compounds the elements lose their original properties and form new substances which are entirely different from them.	In mixtures the properties of an element remain same.
COMPOSITION	Compounds always have a fixed composition by mass.	Mixtures do not have fixed composition.
JOINED OR NOT	The components cannot be separated by physical means.	The components can be separated by physical methods.
MELTING POINTS	Compounds have sharp and fixed melting points.	Mixtures do not have sharp and fixed melting points.

Mixtures		Compounds
May be obtained by mixing substances in any proportions.	1	Have elements combined in a constant ratio by mass.
The substances keep their properties in their mixtures.	2	Have completely different properties than those of their elements.
Do not have distinctive properties like density, melting point, solubility... .	3	Compounds have distinctive properties.
Can be separated into their components by physical methods.	4	Can be decomposed into their components by chemical methods.
Can be homogeneous or heterogeneous.	5	Are homogeneous.
Are not pure substances.	6	Are pure substances.
Have no certain formula.	7	Have certain formulas.

5. **Task for learners**

Pure Substances		Mixtures	
Elements	**Compounds**	**Homogeneus**	**Heterogeneus**

6. **Task support**

You can take information from website in order to fill the table

www.majordifferences.com

https://www.chem.purdue.edu/gchelp/atoms/elements.html

http://www.ivyroses.com/Chemistry/GCSE/Elements-Mixtures-Compounds.php

https://www.reference.com/science/difference-between-mixture-compound-ac5cc16507bb8558

7. **Content language for learners´tasks**

Go to point 3

8. **Scafolding language**

Go to point 4

9. **Assessment criteria**

You have to do a presentation about the difference between pure substances and mixtures.

Be sure you use all content and scaffolding language.

Prepare your presentation step by step.