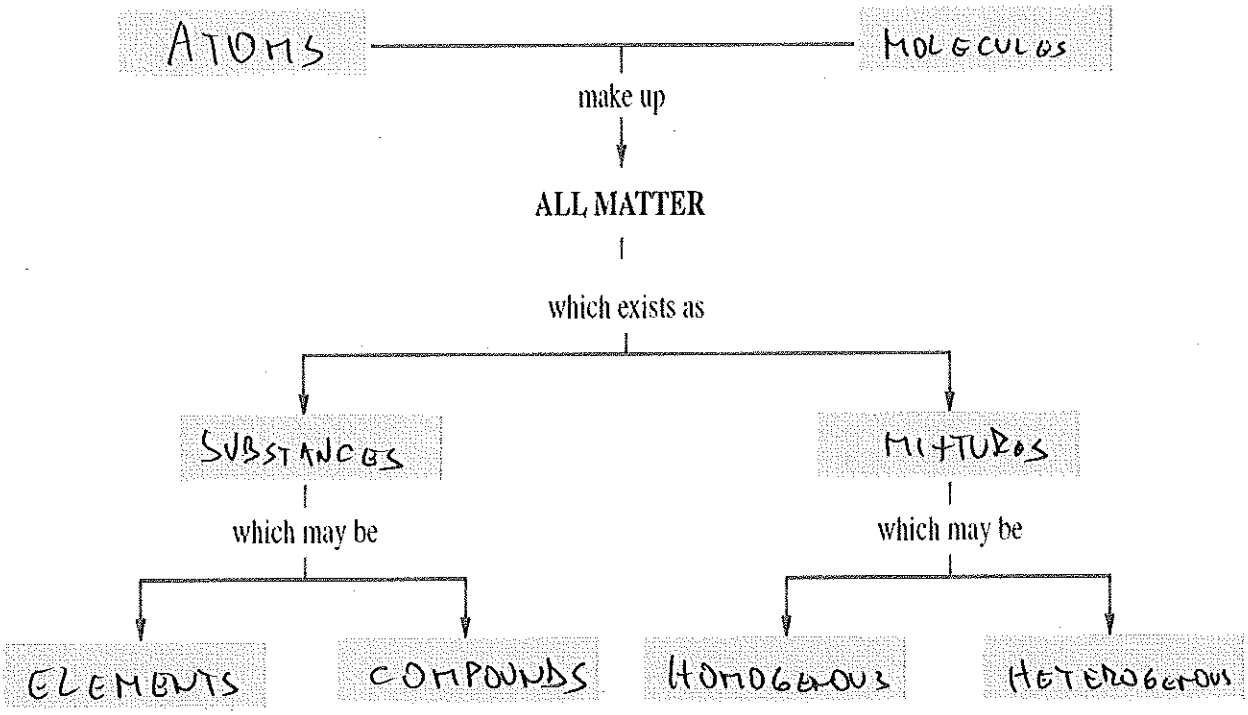
NAME: ANSWER KEY

Classifying Matter WORKSHEET 1

1. **Fill up the missing terms:**

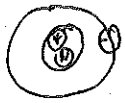


2. **Define the following terms which <u>MAKE UP</u> all matter:**

<u>Atoms:</u>

a. DEFINITION: -A BUILDING BLOCK OF MATTER
-THE SMALLEST POSSIBLE UNIT OF AN ELEMENT

b. Draw a picture of an atom (with orbits and subatomic particles) and indicate which atom the picture represents:

 -> HYDROGEN

<u>Molecules:</u>

a. DEFINITION: A COMBINATION OF 2 OR MORE ATOMS IN A DEFINITE ARRANGMENT HELD BY <u>A COVALENT BOND</u>

b. Give 3 example of a diatomic molecules

O_2

N_2

H_2

c. Give 3 examples of triatomic molecule

H_2O

CO_2

NO_2

3. Define the following terms in which all matter <u>EXISTS</u> as:

<u>Elements:</u>

a. DEFINITION: MADE UP OF ONLY ONE TYPE OF ATOM
HAVE UNIQUE SETS OF CHEMICAL + PHYSICAL PROPERTIES

b. What type of elements there are? Give an example of each! METALS (SODIUM, GOLD), NON-METALS (H, He)
METALLOIDS (SILICON, BORON)

<u>Compounds:</u>

a. DEFINITION: MADE UP OF MORE THAN ONE ATOM BONDED TOGETHER IN A FIXED PROPORTIONS

b. Give 3 examples of a compound containing oxygen : NO_2, CO_2, H_2O

c. Give a name of one of the methods that is used to decompose pure substances into simpler compounds.
BONUS: give <u>a chemical equation</u> for this process. ELECTROLYSIS OF WATER

$$2H_2O_{(l)} \rightarrow 2H_{2(g)} + O_{2(g)}$$

<u>MIXTURES:</u>

DEFINITION: TWO OR MORE PURE SUBSTANCES MIXED TOGETHER
EACH SUBSTANCE REMAINS ITS OWN PROPERTIES

<u>Homogenous mixtures:</u> ONE SUBSTANCE IS DISSOLVED IN ANOTHER CREATING A SUBSTANCE THAT LOOKS LIKE ONE SUBSTANCE

a. Solutions: A HOMOGENOUS MIXTURE THAT APPEARS THE SAME THROUGOUT

b. Colloids

<u>Heterogeneous mixtures:</u> TWO OR MORE SUBSTANCES MIXED TOGETHER IN THE MIXTURE HAS UNEVEN DISTRIBUTION OF THE SUBSTANCES

a. Suspensions

<u>How are different types of mixtures different from each other?</u>

Type of Mixture	Tyndall Effect (Yes/No)	Particles will settle out (sediment) (Yes/No)	The approximate size	Number of different phases
Solution	NO	NO	$< 1nm$	3
Colloid	YES	NO	$1nm - 1\mu m$	3
Suspension		YES	$> 1\mu m$	3

4. Give 5 examples of solutions and for each identify a solute and a solvent:

SOLUTION	SOLVENT	SOLUTE
SALT WATER	WATER	SALT ($NaCl$)
60 % H_2O_2	WATER	H_2O_2
COCA COLA	WATER	SUGAR, CO_2
AMALGAM	MERCURY	GOLD
AIR	~~HYDROGEN~~ GASES	GAS