

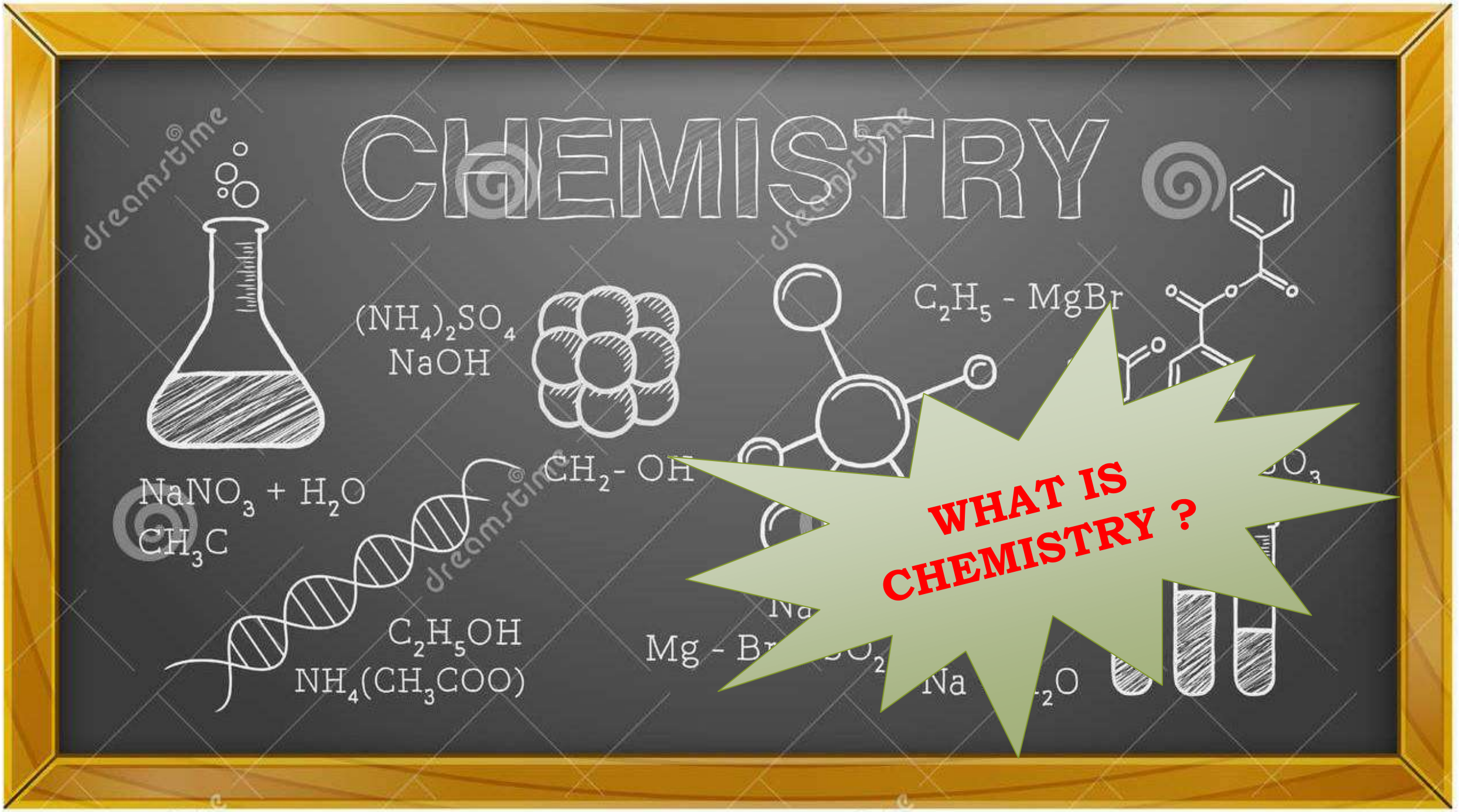
SINCE
1970

SURESH DANIS CLASSES

XI – SCIENCE

LECTURE NO – 1

Prof. Nilesh Panchal


CHEMISTRY
$(NH_4)_2SO_4$
NaOH
C_2H_5 - MgBr
$NaNO_3 + H_2O$
CH_3C
CH_2- OH
C_2H_5OH
$NH_4(CH_3COO)$
Mg - Br
Na
WHAT IS CHEMISTRY ?

Chemistry in our life?

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3


4


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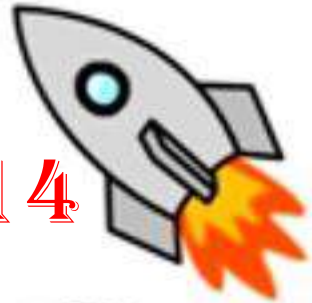

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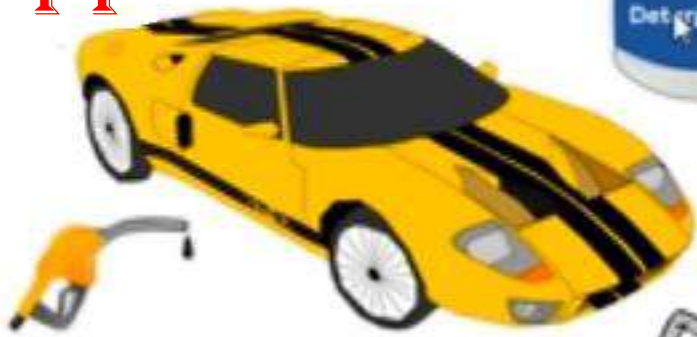

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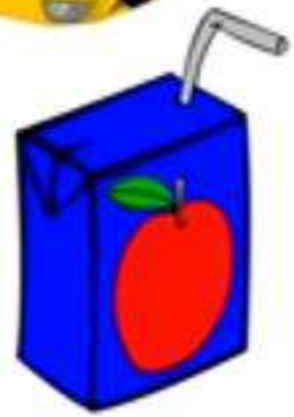

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MATTER

(Chemical Substance which occupy space ,volume & having its own mass)

PHYSICAL MATTER

CHEMICAL MATTER

SOLIDS **LIQUIDS** **GASES**

STATES OF MATTER

Cannot Be Separated By Physical Means

Can Be Separated By Physical Means

PURE SUBSTANCE

MIXTURE (IMPURE SUBSTANCE)

Contains only one type of Atom

ELEMENTS

Contains 2 or More types of atoms in whole number ratio.

COMPOUNDS

Uniform Throughout

HOMOGENOUS SOLUTION

Non -Uniform Distribution

HETEROGENOUS SOLUTION

CHEMICAL MATTER

Can the matter be separated by physical means?

By using a physical property such as size, color, texture, mass, weight, density, etc.

YES

MIXTURE

Is the mixture uniform?
(the same throughout)

YES

HOMOGENEOUS MIXTURE

A **SOLUTION** is a type of homogeneous mixture.
One or more substances dissolved in another.

SOLVENT – does the dissolving
SOLUTES – get dissolved

ALLOY – one or more solids dissolved in another solid

NO

HETEROGENEOUS MIXTURE

The different parts of a **HETEROGENEOUS MIXTURE** can be easily seen and picked out.

Examples: Trail mix, chocolate chip cookies, raisin bran cereal

HETERO means DIFFERENT

NO

PURE SUBSTANCE

Can it be chemically decomposed
(broken into parts by breaking bonds)

YES

COMPOUND
Atoms of 2 or more elements bonded together

Atoms of **2 or more different elements** bonded together.

Examples:
H_2O H_2SO_4 NaCl

NO

ELEMENT
Atoms of only 1 element

Atoms of **only 1 element** (may be 2 or more atoms of the same element bonded together.

Examples:
H_2 O_2 Cl_2 Fe C O_3

CHAPTER NO

10

6 MK

STATES OF MATTER

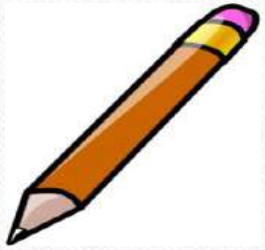
(SOLIDS ,LIQUIDS, GASES)

JEE /NEET / MHT – CET – EVERY YEAR – 1/2 – QUESTION

PART – 1	INTRODUCTION & DISTINGUISH BETWEEN SOLIDS, LIQUID & GASES

INTRODUCTION

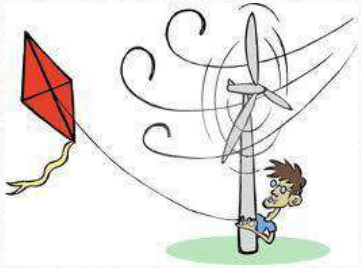
✓A substances that exist in one of the three main distinct (Solid , Liquid , Gases) forms called states of matter.



Pencil



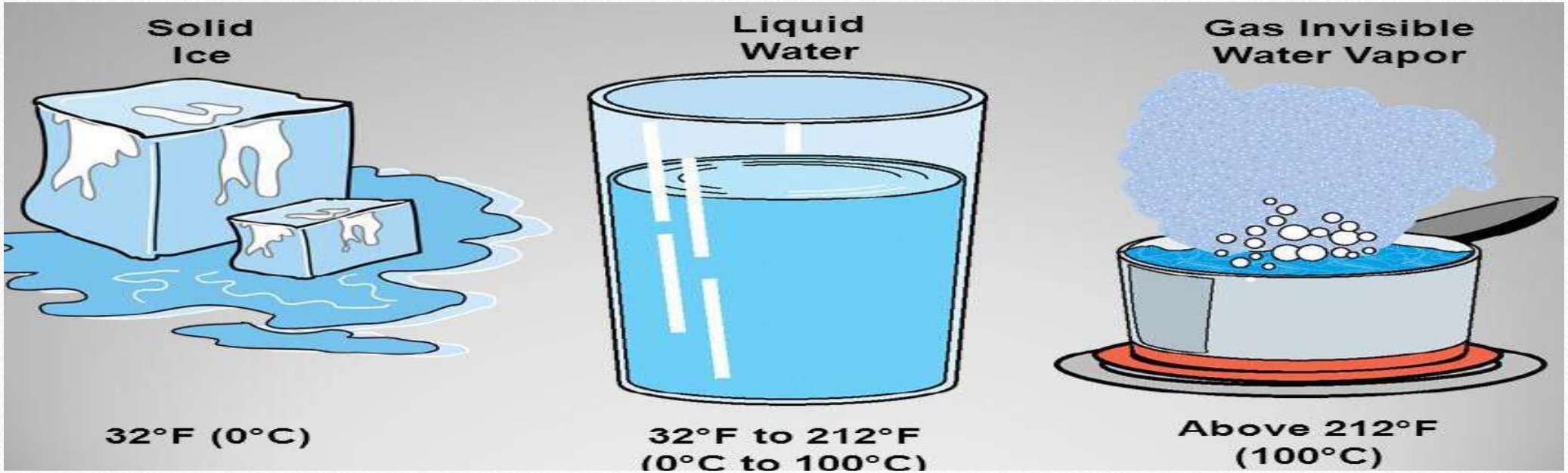
Water



Air

- **EXAMPLES:**

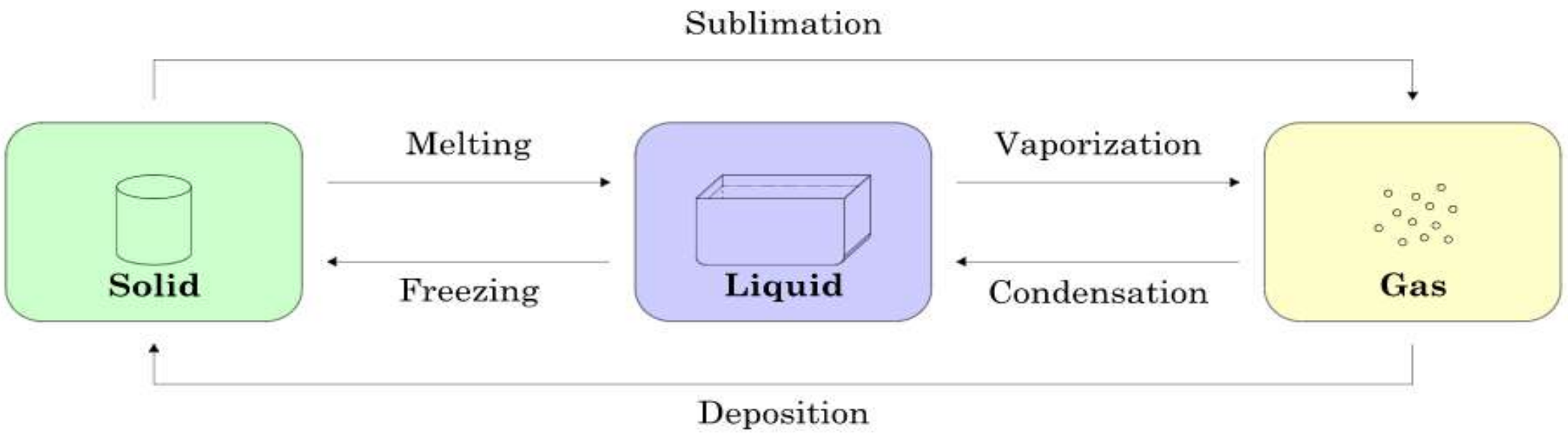
1. Water exists in the three different forms solid(ice), liquid water and gaseous vapours.



2. Camphor exist in two different forms Solid and Gas.

Three states of matter are interconvertible by exchange of Heat as given below:





Distinguishing points between Solid, Liquid and Gas

SR	PROPERTIES	SOLIDS	LIQUIDS	GASES
1	**Shape**	Definite	Indefinite **(Acquires the shape of containers)**	Indefinite **(Acquires the shape of containers)**
2	**Volume**	Definite	Definite	Indefinite **(Acquires the Volume of containers)**
3	**Kinetic Energy of the particles**	Minimum	Moderate	Maximum
4	**Mass**	Definite	Definite	Definite
5	**Movements of Particles (Movement of Atoms)**	(Most Closely packed)	(Less Closely packed)	(Least Closely packed)

SR	PROPERTIES	SOLIDS	LIQUIDS	GASES
6	**Intermolecular space**	Very small Intermolecular space	Moderate Intermolecular space	Large Intermolecular space.
7	**Compressibility**	Practically Non-compressible	Small Compressibility	Highly Compressible
8	**Diffusion**	Slow **(Solid cannot diffuse without melting)**	Fast **(Liquid can easily shows diffusion)**	Very Fast **(Gases posses smaller size, diffusion rate is higher)**
9	**Density**	Highest **(Except H_2O)**	High	Lower

SR	PROPERTIES	SOLIDS	LIQUIDS	GASES
9	**Effect of a Small change in temperature**	Volume change is small.	Moderate effect on volume change	Volume change significantly high.
11	**Rigidity**	Highly Rigid	Less Rigid	Not Rigid
12	**Fluidity**	Cannot flow	Can flow	Can flow





KEEP CALM *and* LOVE CHEMISTRY

