

ACADEMIC STANDARDS

S.No.	Academic Standard	Explanation
1.	Conceptual understanding	Children are able to explain, cite examples, give reasons, and give comparison and differences, explain the process of given concepts in the textbook. Children are able to develop their own brain mappings.
2.	Asking questions and making hypothesis	Children are able to ask questions to understand, to clarify the concepts and to participate in discussions. They are able to make hypothesis on given issues.
3.	Experimentation and field investigation	To understand given concepts in the textbook children are able to do experiments on their own. They are able to participate in field investigation and making reports on them.
4.	Information skills and Projects	Children are able to collect information (by using interviews, internet etc.) and analyses systematically. They are able to conduct their own project works.
5.	Communication through drawing, model making	Children are able to explain their conceptual understanding by drawing figures and making models. Able to plotting graphs by using given information or collected data.
6.	Appreciation and aesthetic sense, values	Children are able to appreciate man power and nature, and have aesthetic sense towards nature. They are also able to follow constitutional values.
7.	Application to daily life, concern to biodiversity	Children are able to utilize scientific concept to face their daily life situations. They are able to show concern towards biodiversity.

MARKING SCHEME AND PAPER PATTERN (PHYSICAL SCIENCE)

Academic Standard (AS)	(Essay Type)	(Short Answer Type)	(Very Short Answer Type)	(Multiple Choice Questions)
	4 questions	6 questions	7 questions	10 questions
	(4M each)	(2M each)	(1M each)	(Half Mark each)
AS 1	2 Q	2 Q	2 Q	10 Q
AS 2		1 Q	1 Q	
AS 3	1 Q		1 Q	
AS 4	1 Q	1 Q		
AS 5		1 Q	2 Q	
AS 6		1 Q	1 Q	
Total Marks (40)	16	12	7	5

CHEMISTRY CHAPTERS**1. MATTER AROUND US**

Introduction, States of matter, Properties of solids, liquids and gases, Diffusion, Can matter change its state?, What is matter made up of?, Particles of matter attract each other, How diffusion takes place?, Effect of temperature on change of state, Effects of change of pressure, Evaporation, Effect of surface area, humidity and wind speed on evaporation.

2. IS MATTER PURE?

Introduction, What is a mixture?, Types of mixtures, Solutions, Suspensions and Colloidal Solutions, Separating the components of a mixture, Sublimation, Evaporation, Paper Chromatography, Separation of immiscible and miscible liquids, Separating funnel, Distillation, Fractional Distillation, Types of pure substances, Understanding the nature of elements, compounds and mixtures.

3. ATOMS AND MOLECULES

Introduction, Law of conservation of mass, Law of constant proportions, Dalton's atomic theory, Atoms and molecules, Why do we name elements?, Symbols of elements, Some unusual symbols, Elements with more than one atom, Atomicity, Valency, What is an ion?, Atomic mass, Molecules of compounds, Chemical formulae of compounds, Molecular mass, Formula unit mass, Mole concept, Molar mass.

4. WHAT IS INSIDE THE ATOM?

Introduction, Sub-atomic Particles, Electrons, Protons and Neutrons, The Structure of an Atom, Thomson's Model of the Atom, Rutherford's alpha particles scattering experiment, Bohr's Model of the Atom, Distribution of electrons in different orbits (Shells), Valency, Atomic number, Atomic mass number, Writing symbols of atoms, Isotopes.

PRACTICALS

LIST OF EXPERIMENTS (Lab Activities)

1. To observe the speed of diffusion of two gases.
2. To separate the components of ink using paper chromatography.