LIST OF EXPERIMENTS

PHYSICS LAB PRACTICAL ACTIVITIES

X-Class

Determination of specific heat of a given solid by principle of method of mixtures.

1) Determination of images formation of (i) Concave lens (ii) Convex lens by obtaining the image of a distant object.
2) Study of a relationship between potential difference and electric current in accordance with Ohms Law.
3) Tracing the path of the rays of light through a glass prism.
4) Study of construction and working of electric Generator and to differentiate Alternating Direct Current.

IX-Class

1) Determination of nature and position of graphs in one dimension motion.
2) Calculating the tension in Atwood Machine using Newton's Law of motion.
3) Measuring the center of gravity of an irregular shaped object.
4) Measuring the density of liquids using hydrometer.

VIII-Class

1) Comparison of various types of forces acting on an object.
2) Measuring the temperature using Six's max-minimum temperature scale.
3) Determination of various properties of magnet without any parallax error.
4) (a) Explanation of the method of electroplating and electrotyping.
   (b) Measuring current using parallel and services electric circuits with respect
   Commercial unit of energy.
5) Activity to show that material medium is essential for propagation of sound

VII-Class

1) Pictorial representation of the motion-time graphs for
   (a) When the object is at rest
   (b) When the object is moving with uniform velocity
   (c) When the object is moving with uniform acceleration
2) To measure the various scales of temperature.
3) Determination of the various properties of light (Rectilinear propagation, reflection and Refraction) with illustrations.

CHEMISTRY LAB PRACTICAL ACTIVITIES

X-Class

1) Classification of various chemical reactions like
   a) Combination reaction [action of water on quick lime]
   b) Decomposition reaction [action of het on ferrous sulphate crystals]
   c) Displacement reaction [iron nails kept in copper sulphate solution]
   d) Double displacement reaction [reaction between sodium sulphatend barium chloride solutions]
2) The study of various properties of acids and bases(HCL and NaOH) by their reaction with
   (i) Litmus solution/ paper [blue/red] (ii) Zinc metal (iii) Sodium carbonate solution
3) Finding the P^H of the following samples using P^H/ universal indicator
   (a) Dilute hydrochloric acid
   (b) Dilute sodium hydroxide solution
   (c) Dilute ethnoic acid solution
   (d) Lemon juice
   (e) Water
   (f) Dilute sodium bicarbonate solution

IX-Class

I) Matter in our surroundings

To determine the (a) boiling point of water (b) melting point of ice.

II) Mixtures and compounds

1. To prepare a mixture and a compound using iron fillings and sulphur powder and distinguish between them on the basis of (i) appearance, i.e homogeneity and heterogeneity, (ii) behavior towards a magnet, (iii) behavior towards CS2 as a solvent and (iv) effect of heat.

2. To separate the components of a mixture of sand, common salt and ammonium chloride.

III) True solutions, Suspensions and Colloids

1) To prepare true solutions of common salt, sugar and alum in water.
2) To prepare suspensions of soil, Chalk powder and fine sand in water.
3) To prepare colloidal solutions of starch in water and egg albumin in water .
4) To distinguish between a true solution, colloidal solution and suspension on the basis of
   (a) Transparency (b) Filtration criterion (c) Stability

IV) Physical and chemical changes

1. To study the reaction between iron nails and copper sulphate solution in water and classify it as a physical or chemical change.

2. To study the reaction when magnesium is burnt in air and classify it as a physical change or a chemical change.

VIII- Class

Lesson wise models, specimens

S.No	Name of the lesson	Name of the chart/model/specimens
1	Metals and Non-Metals	1.Testing the nature of rust 2. Testing of solutions with litmus paper
2	Combustion and flame	1.Experiment to show that air is essential for burning 2. Different zones of candle flame

VII-Class

S.No	**Name of the lesson**	Name of the specimen/chart models
1	Acids, Bases and salts	Acids – HCl, H_2SO_4 Bases- NaCl , CaOH, KaOH Showing indicators, Litmus paper Methylene blue, Saffranin Salts- Acids, Bases, Chart
2	Physical& Chemical changes	Experiment on magnesium ribbon burning in lab experiment on change in the colour of the copper sulphate solution due to reaction with Iron(Fe)-Displacement Lime water test – to show evolving CO_2 gas Crystallisation - experiment

VI-class

S.NO	NAME OF THE LESSON	NAME OF THE SPECIMEN/CHART MODELS
1	Fibre to Fabric	Experiment of natural fibre& synthetic fibre in chemistry lab
2	Separation of substances	Rice-Hand picng Rice Stalks –threshing Plate-Winnowins Seive – Seiving Sedimentation, decantat filtration – Experiment

		evaporation & condensation in chemistry lab saturation, unsaturation
3	Changes around us	Activities Expansion & contraction in chemistry lab
4	Water	Water cycle Evaporation & condensation in chemistry Lab
5	Air around us	Properties of Air, Air has weight, Air has oxygen in biology lab Water contain air: Experiment in chemistry lab Soil has air-Experiment in chemistry lab

MATHEMATICS LAB ACTIVITIES

X-CLASS

1) Demonstration of similar triangles and it's properties using geo board
2) Proving trigonometric identities using colour paper
3) Demonstration on Arithmetic progressions by using patterns

IX-CLASS

1) Explanation of angle in semicircle, angle in segment, angle subtended at the centre by an arc, major arc, minor arc, major and minor segments by using ring of theorem
2) Demonstration on properties of cyclic quadrilateral
3) Demonstration of 3D shapes in finding out surface areas & volumes
4) Deducing relation between areas of parallelogram and triangles

VIII-CLASS

1) Demonstration of complex algebraic identities in a simple way
2) Demonstration of types of triangles

VI- Class & VII- Class basics

Biology

SEMESTER – 1

BIOLOGY LAB PRACTICAL ACTIVITIES

Cycle – 1 - X -Class

S.No	**Name of the topic**	Specimen / Slides/Models
1	Nutrition in Plants	To show Bryophyllum Rhizopus Test for Carbohydrate
2	Respiration	The Energy Producing System Description of Respiratory system Lungs, Humans Xylem, Phloem

Cycle – 2 - X -Class

S.No	**Name of the topic**	Specimen / Slides
1	Transportation	The Circulatory System Description of Human Heart To show the Cardiatic cell To show the RBC and WBC cell

2	Description of Kidney system	Excretion Functioning of Kidneys
3	The Linking System	Coordination To show the Neuron cell Description of Human Brain
4	Reproduction	The Generating System
5	Flower	To show the pollens grains slide Structure of flower
6	Cell Division	Mitosis, Meosis

Cycle – 1 - IX -Class

S.No	**Name of the topic**	Specimen / Slides/Models
1	The fundamental unit of life	To show the slides, Nerve cell Red blood carp cell White blood cells Bone cell, Animal cell, Plant cell
2	To show the model cell division	Mitosis and Meosis
3	Tissues	Plant cell , Meristematic tissue Paranchyma , Collenchyma Sclerenchyma
4	Types of complex tissue	Xylem,Phloem

VIII–Class

S.No	**Name of the topic**	Specimen / Slides/Models
1	Cell Structure and Functions	To show the slides ,Amoeba, Paramecium, Nerve cell, Plant Cell, Animal cell
2	Micro Organisms Friend and Foe	To show the slides, Bacteria, Chlamydomonas, Spirogyra, Aspargillus, Breadmould, Rhizopus To Show the Roots of Leguminous plant and with root nodules
3	Crop Production and Management	Explanation
4	Reproducion Animals	To show the Male Reproductive Organs Female Reproductive Organs, To Show the life Cycle of Frog To show the Budding in Hydra
5	Reaching the Age of Adolescence	To show the Adam's Apple in a grown up boy Role of Hormones in Initiation Reproductive Function Reproductive Phase of Life in Humans Harmones other than Sex Harmones
6	Conservation of Plants and Animals	Flora and Fauna To show the Fern

CLASS : VII

S.No	**Name of the topic**	Specimen / Slides/Models
1	Nutrition in plants	To show the leaf TS(SLIDE) Types of leaves variations Pitcher plants showing lid and pitcher To show the Saprotophs
2	Nutrition in Animals	To show the star fish Demonstration Human Digestive System Arrange the different types of teeth

3	Respiration in Organisms	To show the Human Respiratory system Breathing in Other Animals
4	Transportation in Animals and Plants	To show the section of Human Heart To show the Exceratory System in Human Transport of substance in plants

CLASS : VI

S.No	**Name of the topic**	Specimen / Slides/Models
1	Component of Food	Test for Startch Test for Protiens Test for Fats Deficiency Diseases
2	Getting to know Plants	Demonstration Plant parts Leaf,Stem,seeds Types of root system Show the tap root system Fibrous system Cutting of an Overy
3	Body movements	The Human Skeleton System To show the types of bones and functions Ball and socket Joints Pivotal Joint Hinge joint Fixed joint
4	The Living Organisms – Characteristics And Habitats	Different kinds of fishes Some Terrestrial Habitats Ponds AND lakes Eco system Aquatic plants

COMPUTER LAB THEORY & PRACTICALS

Class	Topics
X – CLASS	➢ MS – POWER POINT PRESENTATION ➢ MS – EXCEL ➢ MS – WORD ➢ INTERNET BASICS
IX – CLASS	➢ MS – EXCEL ➢ MS – WORD ➢ MS – PAINT
VIII – CLASS	➢ MS - EXCEL ➢ MS – WORD ➢ MS – PAINT
VII – CLASS	➢ MS – WORD ➢ MS – PAINT
VI -CLASS	➢ MS – PAINT ➢ WORD PAD ➢ NOTE PAD

ENGLISH LAB ACTIVITIES

S.NO	TOPIC	ACTIVITY
1	Phonics	Paper cup (Word Formation) Material noun
	Nouns	Project Identifying the nouns Pick out nouns from your T.B.
	Pronoun	identifying the pronoun Pick out pronouns from your T.B.
	Adjectives	Grid
	Verbs	Pick out verbs from your T.B.
	Adverbs	Pick the adverb from the sentence
	Prepositions	Fill the gaps

	Conjunctions	Fill the gaps
	Articles	Prepare a mind map on articles Definite and Indefinite Articles(a,an,the)
	Interjections	Prepare a feelings chart

English Language Lab Material

Cambridge (English in Mind , English in Mind Level – 1, 2 – Workbook 1, 2, 3)

(6th class to 9th class)

Class	Activity
VI-class	Mastering English – Spelling Mastering English – Vocabulary Software speech Solutions
VII- Class	Punctuation Mastering English - Grammar Mastering English – Composition
VIII-Class	Module 1 : Grammar Vocabulary Reading & Writing/Dictation/Listening Everyday English Module 2 : Grammar Vocabulary Reading & Writing/Dictation/Listening Everyday English
IX-Class	Module 3 : Grammar Vocabulary Reading & Writing/Dictation/Listening Everyday English Module 4 : Grammar Vocabulary Reading & Writing/Dictation/Listening Everyday English

IOT

Digital Horizons

Building Blocks for the Future

Class : IX

Chapters

1. Internet of Things (IoT) & Robotics
2. Foundations of Artificial Intelligence (AI)
3. Financial Literacy