

ENGLISH

UNIT NO. & LESSON	LEARNING OBJECTIVE	ACTIVITY
APRIL		
(Hornbill) A Photograph The Portrait of a Lady (Writing) Notice Note Making (Snapshot) The Address	Developing points into an article. To be able to write notices. To learn the art of note-making.	<ul style="list-style-type: none"> • Interview of Khushwant Singh speaking about his grandmother about her impact on his life. • A documentary will be shown on the partition of India to help students understand the pain that one goes through when separated from everything one's own. • Appreciation of women, motherly figures. • Story of people after war.

Reference Book/ Web link : <http://www.poets.org/poetsorg/poet/t-s-eliot>

MAY

(Hornbill) The Voice of the Rain (Novel) (Ch.1)The Canterville Ghost (Writing) Article Writing (Snapshot) The Summer of the Beautiful White Horse	To enjoy and appreciate nature's beauty through the poem To enjoy a story on family values To learn the art of article writing	Activity: <ul style="list-style-type: none"> • The movie Canterville Ghost will be shown (25 Mins.) • A narrative of the poem will be played. • Appreciation of natural beauty • Story of honesty and principles • Write notices
--	--	---

Reference Book/ Web link : <http://www.poets.org/poetsorg/poet/t-s-eliot>

JULY

(Hornbill) We Are Not Afraid To Die If We are Together (Novel) (Ch.2)The Canterville Ghost (Writing) Poster Advertisement (Snapshot) Albert Einstein	To appreciate a story of trust faith and courage To learn lessons from Albert Einstein's life To learn to design posters and ads	Activity: <ul style="list-style-type: none"> • A documentary will be shown on Albert Einstein. • A PPT will be shown on Multiple Intelligence. • Story of courage and trust • Lesson from life history • Design posters and ads.
--	--	---

Reference Book/ Web link : <http://en.wikipedia.org/wiki/Dhumaketu>

AUGUST

<p>(Hornbill) Discovering Tut (Novel) (Ch.3 The Canterville Ghost) (Writing) Letter (Enquiry/Editor/Placing Order) Report (Newspaper/Magazine) (Snapshot) Ranga's Marriage</p>	<p>To enhance knowledge on mummification To learn to respect relationships To learn the art of reporting writing</p>	<p>Activity:</p> <ul style="list-style-type: none">• Howard Carter's interview on his experience with Tut's mummy.• Story of a legacy• Story of the age-old institution of marriage• Write reports
--	--	---

Reference Book/ Web link: <http://www.examrace.com/Sample-Objective-Questions/Aptitude-Questions/Aptitude-Data->

SEPTEMBER

REVISION

Reference Book/ Web link : <http://www.youtube.com/watch?v=EIJmOkVFGdI>

OCTOBER

<p>(Hornbill) Childhood (Novel) The Canterville Ghost (Ch.4) (Writing) Factual Description (Snapshot)</p>	<p>Rediscover childhood Enjoy a ghost story To get answers to lost childhood To enjoy reading a ghost story</p>	<p>Describing facts in detail</p>
---	---	-----------------------------------

Reference Book/ Web link : <http://www.bifroest.demon.co.uk/misc/homophones-list.html>

NOVEMBER

<p>(Hornbill) Father to Son The Ailing Planet (Novel) The Canterville Ghost (Ch.5) (Writing) Invitation & Replies</p>	<p>Poem depicting father-son relationship Environment Awareness To try and find answers to a father's questions Creating awareness about the different issues related to Planet earth To enjoy reading a ghost story To learn the art of replying invitations.</p>	<p>Activity:</p> <ul style="list-style-type: none">• The film 'Wallee' will be shown. It shows a world devoid of a natural environment.• The poem 'Father to Son' will be recorded in the teacher's voice and played. The students will be asked to follow suit.
--	--	---

Reference Book/ Web link : <http://www.youtube.com/watch?v=5EYNIOFjHU4>
http://www.youtube.com/watch?v=bpgKEe8_g6o

DECEMBER

(Novel)

The Canterville Ghost
(Ch.6)

(Writing)

Letters
(Complaints/Job
Application)

(Snapshot)

Mother's Day Birth

To enjoy reading a ghost
story
To learn the art of replying to
job advertisements and
writing letters of complaint

Activity:

- A documentary/PPT will be shown on 'Women Power'.
- A documentary on doctors who will be depicted as 'saviours'.

Reference Book/ Web link : <http://www.poets.org/poet.php/prmPID/292>
<http://www.youtube.com/watch?v=nVNxUcJJoSE>

JANUARY

(Hornbill)

The Tale of the Melon
City

(Novel)

The Canterville Ghost
(Ch.7)

(Writing)

Debate
Speech

To identify satiric situations
in an otherwise simple poem
To enjoy reading a ghost
story
To learn the art of writing
debate and speech

Activity:

The Movie 'Hirak Rajar Deshe'
will be shown.
Satiric poetry
Ghost story
Writing debate and speech

Reference Book/ Web link : <http://www.youtube.com/watch?v=l8q30E7-eNc>

FEBRUARY

REVISION

MATHS

UNITNO. & LESSON

LEARNING OBJECTIVE

KEY CONCEPT /VALUE POINT

APRIL

Chapter -1

Sets

Chapter 2

Relations and Functions

- To understand the Concept of a set, Representation of Sets, Set Relation, Venn diagrams
- Problem solving using sets
- How to connect pair of objects from two sets and then introduce relation between two objects of the pair

Sets and their representations, The empty set, Finite and Infinite set, equal sets, subsets, power sets, universal sets , venn diagram, operation on sets, complement of sets . Union and Intersection Sets.

Cartesian product of Sets. Relations and Functions.

Reference Book/ Web link : <https://www.mathsisfun.com/sets/sets-introduction.html>

MAY

Chapter – 3

Trigonometric Functions.

- Understand the concept of Unit circle approach in which, we use radian measure of an angle to define trigonometric functions of real numbers

Angles, Trigonometric Functions. Trigonometric functions of sum and difference of two angles . trigonometric equations

Reference Book/ Web link : <https://in.ixl.com/math/class-xi>

JULY

Chapter- 6

Linear inequalities

Chapter-4

Principle of mathematical Induction

- to solve (algebraically or graphically) linear inequalities in one Or two variables
- Induction, begins by observations, and from observation we arrive at some tentative conclusion called Conjectures, . the PMI helps in proving some of these conjectures which are true

Inequalities. Algebraic solutions of linear inequalities in one variable and their graphical representation . graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables .

Motivation. The principal of mathematical induction

Reference Book/ Web link: <https://www.learnnext.com/CBSE/Class-11/Maths/Linear-Inequalities/Introduction-to-Linear-Inequalities/L-1803675.htm>

AUGUST

Chapter-5

Complex numbers and quadratic equations

Chapter-7

Permutation and Combinations

Chapter-9

Sequences and Series

- how to extend the real number system to a larger system called complex number so that the solution of quadratic equations $ax^2 + bx + c = 0$ where a, b, c are real numbers are possible.
- learn some basic technique useful in determining the number of different ways of arranging and selecting objects in a wide variety of situations
- to understand the concept of Arithmetic mean (AM), Geometric Progression (GP) Geometric Mean (GM), relationship between AM and GM

Complex numbers. Algebra of complex numbers. The modulus and the conjugate of a complex number. Argand plane and polar representations. Quadratic equations.

Fundamental principal of Counting. Permutations, Combinations

Sequences. Series. Arithmetic progression (A.P). Geometric Progression (G.P). relationship between A.M and G.M. sum to n terms of Special Series

Reference Book/ Web link : <https://www.youtube.com/watch?v=CtxEtc6XRag>

SEPTEMBER

REVISION

OCTOBER

Chapter-13

Limits and Derivatives.

Chapter- 10

Straight lines

Chapter- 8

Binomial Theorem

- to define the derivative of real function, give the geometrical and physical interpretation, study some algebra of Derivatives and will obtain derivatives of some algebraic and trigonometric functions
- How coordinate geometry deals with study of geometry by means of algebra
- to expand any power of a binomial expression.

Intuitive Idea of derivatives. Limits. Limits of trigonometric Functions. Derivatives.

Slop of a line, various forms of the equation of a line. General Equation of a line. Distance of a point from a line

Binomial theorem for positive Integral Indices. General and middle Terms.

Reference Book/ Web link: <http://www.mathsisfun.com/algebra/binomial-theorem.html>

NOVEMBER

Conic sections. Ch -11

- derive the standard equations of parabola, ellipse, hyperbola and circle and their sample properties.

Sections of a cone. Circle. Parabola. Hyperbola. Ellipse.

Introduction to three-Dimensional Geometry. Ch-12

- analyse geometry in a plane – two dimensional and three-dimensional space.

Coordinate Axes and coordinate planes in three dimensional spaces. Coordinates of a point in space. Distance between two points. Section formula.

Reference Book/ Web link : <http://math2.org/math/algebra/conics.htm>

DECEMBER

Chapter 15

Statistics

to interpret the measure of central tendency , which give a rough idea , better.

Measures of Dispersion. Range. Mean deviation. Variance and standard deviation. Analysis of frequency Distributions.

Chapter 16

Probability

understand the concept of the theory of probability developed as a result of studies of games of chance or gambling

Random Experiments. Event. Axiomatic Approach to probability.

Reference Book/ Web link : <http://www.topperlearning.com/study/cbse/class-11-science/mathematics/chapter/probability/b101c3s3ch107>

JANUARY

Chapter 16

Mathematical reasoning

- to expose the logical tricks , understand many illogical patterns of reasoning, which are quite effective for detecting bad argumentation

Statements. New statements from old. Special words/ phrases Implications. validating statements

Reference Book/ Web link : <https://www.youtube.com/watch?v=SOxeHyXI3vA>

PHYSICS

CHAPTER & KEY CONCEPT	LEARNING OBJECTIVE
APRIL	
Ch-1: Physical world	<ol style="list-style-type: none"> 1. Explain laws of nature. 3. Define physics & technical aspects.
Ch-2: Units & Measurement	<ol style="list-style-type: none"> 1. Explain units of different physical quantity with their dimensions. 2. Differentiate between different units. 3. Explain measuring instruments. 4. Derive errors in measurement.
Ch-3: Motion in a straight line	<ul style="list-style-type: none"> • Define frame of reference, different motions, positions. • Derive speed, velocity, & acceleration. • Apply methods of differentiation & integration in uniform & non-uniform motions. • Calculate average speed & velocity. • Draw different graphs of motion. • Find the relations of uniformly accelerated motion. • Solve the problems related to equation of motion
Reference Book/ Web link : http://physics.nist.gov/cuu/Units/units.html , http://schools.aglasem.com/46477	
MAY	
Ch-4: Motion in a plane	<ul style="list-style-type: none"> • Compare vectors & scalars • Distinguish between position & displacement vector. • Explain equality vectors. • Construct graphs of addition & subtraction of a vector. • Resolve vectors in to rectangular components. • Express vector addition- Analytic method. • Express velocity & define acceleration. • Determine relative velocity in two dimension. • Derive equation of projectile motion. • Illustrate the law of inertia. • State & Explain Newton's first law of motion. • Define momentum.
Ch-5: Laws of motion	<ul style="list-style-type: none"> • Verify Newtons second law of motion. • Define impulse. • Describe Newton's third law of motion. • Explain the concept of momentum. • State & verify the law of conservation of momentum. • Define equilibrium of particles. • Illustrate common forces in mechanism. • Demonstrate rolling friction.
Reference Book/ Web link : https://www.grc.nasa.gov/www/k12/airplane/newton1.html	

JULY

Ch-6: Work, Energy & Power

Students should be able to-

- Explain Work-Energy theorem.
- Define work & calculate work using formula.
- Explain the concept of energy & transformation of energy also derive the equation of kinetic energy & potential energy.
- Deduce the expression of potential energy by a spring force.
- Discuss gravitational potential energy.
- Illustrate law of conservation of energy.
- Define power
- Analyze the impact of collision.
- Compare elastic collision & inelastic collision.

Ch-7: System of particle & Rotation motion

Students should be able to-

- Explain centre of mass of continuous body.
- Derive motion of the centre of motion.
- Derive linear momentum & its conservation principle.
- Derive rocket propulsion.
- Explain concept of collision.
- Differentiate between elastic & inelastic bodies.
- Solve problems based on two dimensional elastic collision.

Reference Book/ Weblink: <https://www.engrade.com/traciewynn/500006190599/17>, <http://schools.aglasem.com/46494>

AUGUST

Ch-7(rem.): System of particle & Rotation motion

- Relate equation of linear motion to rotational motion.
- Derive equation of torque & solve problems based on torque equation.
- Solve problems based on angular momentum.
- Explain conservation of angular momentum.
- Find kinetic energy of a rigid body rotating about a given axis.
- Find measurement of G with gravitational potential energy & potential.
- Calculate Gravitational force & solve numerical based on it.
- Derive variation of g with height.
- Explain kepler's law.
- Explain weightlessness in a satellite.
- Find escape velocity.

Ch-8: Gravitation

Reference Book/ Web link : <http://study.com/academy/lesson/gravitational-force-definition-equation-examples.html>

SEPTEMBER

REVISION

OCTOBER

Ch-9: Mechanical properties of solids	<ul style="list-style-type: none">• Explain terms like elasticity, stress, strain & relate all these things in hooks' law.• Explain surface energy & tension with derivation.• Derive excess pressure inside a drop & excess pressure in a soap bubble.• Define contact angle.• Explain viscosity.• Explain stokes' law with terminal velocity.• Define critical velocity & Reynolds number.
Ch-10: Mechanical properties of fluid	<ul style="list-style-type: none">• Derive pressure inside a fluid.• State pascal's law.• Define atmospheric pressure & barometer.• State Archimedes' principle.• Derive pressure difference & buoyant force in accelerating fluids.• Derive equation of continuity & Bernoulli's equation.
Ch-11: Thermal properties of matter	<ul style="list-style-type: none">• Define terms like heat, temperature & expansions.• Derive equation of expansions of solids, liquids & gases.• Derive specific heat capacity.• Define latent heat capacity.• Derive heat transfer with methods like conduction, convection & radiation.• Explain thermal conductivity.• Explain blackbody radiation with wein's displacement law.

Reference Book/ Web link : <http://gradestack.com/CBSE-Class-11th-Science/Mechanical-Properties-of/Summary/17544-3563-24249-study-wtw>

NOVEMBER

Ch-12: Thermodynamics	<ul style="list-style-type: none">• Explain the concepts of hot & cold bodies.• Derive zeroth law of thermodynamics.• Define terms like heat, work & internal energy in heat.• State first law of thermodynamics.• Derive isothermal process & adiabatic process.• State second law of thermodynamics.• Derive heat engine & refrigerator with equations.
Ch-13: Kinetic theory	<ul style="list-style-type: none">• Define assumptions of kinetic theory of gases.• Calculate the pressure of an ideal gas.• Derive RMS speed.• Define kinetic interpretation of temperature.• Derive ideal gas equation.• State Maxwell's speed distribution law.

ReferenceBook/Weblink: <https://www.khanacademy.org/science/chemistry/thermodynamics-chemistry>

DECEMBER

Ch-14: Oscillation

students should be able to-

1. Define SHM with its nature.
2. Derive equation of motion of SHM.
3. Define terms associated with SHM.
4. Explain SHM as a projection of circular motion.
5. Define energy conservation in SHM.
6. Derive angular SHM.
7. Define simple pendulum, physical pendulum & torsional pendulum.
8. Composition of two simple harmonic motions.
9. Explain damped harmonic motion & force oscillation & resonance.

Students should be able to-

1. Differentiate between transverse & longitudinal waves with examples.
2. Derive equations of wave.
3. Explain principle of superposition of waves.
4. Define reflection of waves.
5. Derive equation of standing waves in string & organ pipe.
6. Explain terms like beats, mode & Doppler effect with examples.

Ch-15: Waves

Reference Book/ Web link : <http://agni.phys.iit.edu/~vpa/wavesosci.html>

JANUARY-FEBRUARY

REVISION

CHEMISTRY

CHAPTER & KEY CONCEPT	LEARNING OBJECTIVE
APRIL	
Unit I: Some Basic Concepts of Chemistry	<ul style="list-style-type: none">• understand and appreciate the role of chemistry in different spheres of life;• explain the characteristics of three states of matter;• classify different substances into elements, compounds and mixtures;• use scientific notations and perform simple mathematical operations on numbers;• differentiate between precision and accuracy;• determine significant figures• proton and neutron and their characteristics;
Unit II: Structure of Atom	<ul style="list-style-type: none">• describe Thomson, Rutherford and Bohr atomic models;• understand the important features of the quantum mechanical model of atom;• understand nature of electromagnetic radiation and Planck's quantum theory;• explain the photoelectric effect and describe features of atomic spectra;• state the de Broglie relation and Heisenberg uncertainty principle;• define an atomic orbital in terms of quantum numbers;
Reference Book/ Web link : http://physics.nist.gov/cuu/Units/units.html , http://schools.aglasem.com/46477	
MAY	
Unit III: Classification of Elements and Periodicity in Properties	<ul style="list-style-type: none">• appreciate how the concept of grouping elements in accordance to their properties led to the development of Periodic Table.• understand the Periodic Law;• understand the significance of atomic number and electronic configuration as the basis for periodic classification;• name the elements with $Z > 100$ according to IUPAC nomenclature;• classify elements into s, p, d, f blocks and learn their main characteristics;
Unit IV: Chemical Bonding and Molecular Structure	<p>understand Kossel-Lewis approach to chemical bonding;</p> <ul style="list-style-type: none">• explain the octet rule and its limitations, draw Lewis structures of simple molecules;• describe the VSEPR theory and predict the geometry of simple molecules;• explain the valence bond approach for the formation of covalent bonds;• predict the directional properties of covalent bonds;• explain the different types of hybridisation involving s, p and d orbitals and draw shapes of
Reference Books: https://www.youtube.com/watch?v=4oYjH0wotcM	

JULY

Unit V: States of Matter: Gases and Liquids

- explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of particles;
- explain the laws governing behaviour of ideal gases;
- apply gas laws in various real life situations;
- explain the behaviour of real gases;

ReferenceBook/Weblink: <https://www.engrade.com/traciewynn/500006190599/17>, <http://schools.aglasem.com/46494>

AUGUST

Unit VI: Chemical Thermodynamics

- explain the terms : system and surroundings;
- discriminate between close, open and isolated systems;
- explain internal energy, work and heat;
- state first law of thermodynamics and express it mathematically;
- calculate energy changes as work and heat contributions in chemical systems;
- calculate enthalpy changes for various types of reactions;
- state and apply Hess's law of constant heat summation;
- differentiate between extensive and intensive properties;
- define spontaneous and non- spontaneous processes;

Unit VII: Equilibrium

- identify dynamic nature of equilibrium involved in physical and chemical processes;
- state the law of equilibrium;
- explain characteristics of equilibria involved in physical and chemical processes;
- write expressions for equilibrium constants;
- establish a relationship between K_p and K_c ;
- explain various factors that affect the equilibrium state of a reaction;
- classify substances as acids or bases according to Arrhenius,

Reference Book/ Web link : <http://study.com/academy/lesson/gravitational-force-definition-equation-examples.html>

SEPTEMBER

REVISION

OCTOBER

Unit VIII: Redox Reaction

identify redox reactions as a class of reactions in which oxidation and reduction reactions occur simultaneously
define the terms oxidation, reduction, oxidant (oxidising agent) and reductant (reducing agent);

- present informed opinions on the position of hydrogen in the periodic table;
- understand the structure of water and use the knowledge for explaining physical and chemical properties;

Unit IX: Hydrogen

- explain how environmental water quality depends on a variety of dissolved substances.

. Difference between 'hard' and 'soft' water and learn about water softening;

- acquire the knowledge about heavy water and its importance;

- understand the structure of hydrogen peroxide, learn its preparatory methods and

properties leading to the manufacture of useful chemicals and cleaning of environment;

- understand and use certain terms e.g., electron-deficient, electron-precise, electron-rich, hydrogen economy, hydrogenation etc.

Reference Book/ Web link : <http://gradestack.com/CBSE-Class-11th-Science/Mechanical-Properties-of/Summary/17544-3563-24249-study-wtw>

NOVEMBER

Unit X: s-Block Elements (Alkali and Alkaline Earth Metals)

- describe the general characteristics of the alkali metals and their compounds;

- explain the general characteristics of the alkaline earth metals and their compounds;

- describe the manufacture, properties and uses of industrially important sodium and calcium compounds including Portland cement;

- appreciate the biological significance of sodium, potassium, magnesium and calcium.

DECEMBER

Unit XII: Organic Chemistry - Some Basic Principles and Technique

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested projects

- Checking the bacterial contamination in drinking water by testing sulphide ions.

- Study of the methods of purification of water.

- Testing the hardness, presence of iron, fluoride, chloride etc. depending upon the regional variation in drinking water and the study of causes of presences of these ions above permissible limit (if any)

Unit XIII: Hydrocarbons

- Investigation of the foaming capacity of different washing soaps and the effect of addition of sodium carbonate on them.

- Study of the acidity of different samples of the tea leaves.

Reference Books/ Web Links: <https://www.youtube.com/watch?v=TL-zoQFqdZE>

JANUARY

Unit XIV: Environmental Chemistry

- understand the meaning of environmental chemistry;
- define atmospheric pollution, list reasons for global warming. Green house effect and acid rain;
- identify causes for ozone layer depletion and its effects;
- give reasons for water pollution and know about international standards for drinking water;

Unit XI: Some p -Block Elements Group 13 and 14 Elements:

- appreciate the general trends in the chemistry of p-block elements;
- describe the trends in physical and chemical properties of group 13 and 14 elements;
- explain anomalous behaviour of boron and carbon;
- describe allotropic forms of carbon;
- know the chemistry of some important compounds of boron, carbon and silicon;

Web links: <https://www.slideshare.net/zeelpatel35/environmental-chemistry-30492960>

BIOLOGY

CHAPTER & KEY CONCEPT	LEARNING OBJECTIVE
APRIL	
<p>Unit I: Diversity of Living Organism Chapter 1 The Living World</p> <p>Chapter 2 Biological Classification</p> <p>Chapter 3 Plant Kingdom</p>	<ul style="list-style-type: none"> • Study the Characteristics of Living Organisms • Define Biodiversity • Discuss the Need for classification and rules of Nomenclature • Define the systems of classification • Explain the five kingdom classification with salient features and examples of each kingdom • Draw the structure of virus and learn the diseases caused by virus. • Classify plant kingdom • Explain the salient features of major groups of plant and differentiate between each group. • Differentiate sporophyte and gametophyte • Explain the life cycle of Angiosperms.

Reference Book/ Web link : <http://gradestack.com/CBSE-Class-11th-Science/The-Living-World/Living-World/17581-3568-30426-study-wtw>

MAY

<p>Chapter 4 Animal Kingdom</p> <p>Unit 2: Structural Organization in Plants and Animals Chapter 5 Morphology of Flowering Plants</p> <p>Chapter 6 Anatomy of Flowering Plants</p>	<ul style="list-style-type: none"> • To discuss <i>animal</i> diversity. • List out the characteristics of animals based on the grades of organization , • type of symmetry and kinds of body cavity • Recall then characteristic features and example of each phylum. • Classify types of roots • Explain the characteristic and modifications of root and stem. • Discuss the types of inflorescence with examples. • Give an outline classification of fruits. • Explain the meristematic tissue. • Discuss the complex epidermal tissue system. • Explain the structure of stomata and process of stomatal opening and closing. • Compare the anatomy of Dicot and Monocot stem and root. • Compare annual and growth rings.
--	---

Reference Book/ Web link: <https://www.youtube.com/watch?v=paUP3z9RQR8>

JULY

Chapter 7

Structural Organisation in Animals

Unit 3: Cell Structure and Function

Chapter 8

Cell-The Unit of Life

Biomolecules

- Recall the different types of animal and plant tissues and discuss their functions.
- Explain morphology and body system in cockroach, Earthworm and Frog.
- Recall and draw the structure of cell.
- Compare unicellular and multicellular organisms.
- Describe cell organelles with diagram.
- Tabulate cell organelles and their functions.
- Explain structure function and types of carbohydrates
- Discuss the properties of lipids
- Describe properties of enzymes and explain their mechanisms of action.
- Differentiate water soluble from fat soluble vitamins.

ReferenceBook/Weblink:<https://www.engrade.com/traciewynn/500006190599/17>, <http://schools.aqlasem.com/46494>

AUGUST

Chapter 10

Cell Cycle and Cell Division

Cell cycle, Mitosis, Meiosis and their significance.

Unit 4: Plant Physiology

Chapter 11

Transport in Plants

Movement of water, gases and nutrients, Osmosis, Diffusion, facilitated diffusion, Active transport, Imbibition, Water potential, Plasmolysis, long distance transport of water, Diffusion of gases.

- Explain the term cell cycle and cell division.
- Describe the various stages in mitosis and meiosis.
- Differentiate between mitosis and meiosis.
- Discuss water potential of a plant cell.
- Explain the theories of translocation.
- Recall the factors affecting stomatal opening and closing.

Reference Book/ Web link:-<https://www.youtube.com/watch?v=xgLIFkyY9dc>

SEPTEMBER

REVISION

OCTOBER

Chapter-12 Mineral Nutrition

- Define essential mineral elements.
- Compare micro and macronutrients – their role and deficiency symptoms in plants.
- Describe the nitrogen metabolism in relation to plants.

Chapter-13 Photosynthesis in Higher Plants

- Illustrate with the help of diagram the structure of chloroplast.
- Recognize the role of pigments in photosynthesis.
- Explain the mechanism of photosynthesis- light and dark reaction.
- Tabulate the difference between C3 and C4 pathway.

Chapter-14 Respiration in Plants

- Define the term Respiration and recall the types of respiration.
- Describe the mechanism of respiration including glycolysis, citric acid cycle and electron transport chain.
- Discuss fermentation and aerobic respiration.

Reference Book/ Web link : <http://gradestack.com/CBSE-Class-11th-Science/Mechanical-Properties-of/Summary/17544-3563-24249-study-wtw>

NOVEMBER

Chapter-15 Growth and Development

- Restate the conditions necessary for germination.
- Explain the characteristics of growth and development.
- Explain the mode of action of phytohormones.
- Explain various tropic movements in plants.

Unit 5: Human Physiology (A)

Chapter-16 Digestion and Absorption

- Explain the process of digestion and absorption of food.
 - Explain the process of egestion.
 - Describe metabolism of the major products food stuffs and their nutritive value.
 - Recall nutritional deficiency and disorders
 - Draw the elementary canal in human beings.
 - Explain the structure of respiratory systems in humans.
 - Describe the mechanism of respiration in human being.
- Describe gaseous exchange

Chapter-17 Breathing and Exchange of Gases

ReferenceBook/Weblink: <https://www.khanacademy.org/science/chemistry/thermodynamics-chemistry>

DECEMBER

Chapter-18 Body Fluids and Circulation

- List the components in blood and their functions.
- Discuss the types of blood group in human beings.
- Describe the structure of human heart.
- Explain double circulation and cardiac cycle.
- Describe diseases due to disorders of circulatory system.

Human Physiology (B)

Chapter-19

Excretory Products and Their Elimination

- Illustrate the excretory system of man and L.S of human kidney with the help of diagram
- Discuss the process of elimination of nitrogenous waste.
- Describe the process of urine formation.
- Discuss the disorders related to excretory system,

Chapter-20

Locomotion and Movement

- Recall the types of muscle and their characteristics.
- Explain the mechanism of muscle contraction
- Discuss the disorders of muscular and skeletal system

Reference Book/ Web link:-<http://www.bifroest.demon.co.uk/misc/homophones-list.html>

JANUARY

Chapter-21 Neural Control and Coordination

- Recall the human nervous system and discuss the structure and function of neuron.
- Explain the generation and conduction of nerve impulse.
- Describe the structure of brain, Eye and Human ear.

Chapter-22 Chemical Coordination and Integration

- Define hormone and their function.
- To explain the human endocrine system.
- Explain the mechanism of action of hormones

Reference Book/ Web link:-<http://www.biologydiscussion.com/chemical-coordination/chemical-co-ordination-and-regulation-of-human-endocrine-system/5071>

PHYSICAL EDUCATION

UNIT NO.AND LESSON	LEARNING OBJECTIVE	ACTIVITY
APRIL		
<p><u>Ch-1</u> Changing trends & career in physical education</p> <p><u>Ch-2</u> Physical fitness, wellness and lifestyle</p>	<ul style="list-style-type: none"> • Meaning and relevance of physical education • Able to identify and choose physical education career • Differentiate between integrated and adaptive physical education. • Will be able to know the importance of physical fitness • Awareness about health threats and preventive measures to threats • Positive component of lifestyle to practically apply. 	<p style="text-align: center;"><u>Athletics</u></p> <ul style="list-style-type: none"> • Track and field measurement. • Skills of the event
MAY		
<p><u>Ch-3</u> Olympic movement</p> <p><u>Ch-4</u> Yoga</p>	<ul style="list-style-type: none"> • Enhance knowledge about Olympic games • Identify Olympic motto and its meaning • Awards of the Olympic • Learn the meaning and importance of yoga • Learn the role of yoga in preventing diseases. 	<p style="text-align: center;"><u>Swimming</u></p> <ul style="list-style-type: none"> • Introduction • Shapes of swimming pools. • Strokes
JULY		
<p><u>Ch-5</u> <u>Doping</u></p>	<ul style="list-style-type: none"> • Identify and learn the responsibilities of an athlete as an individual and for the society. • Different tests in competition • Adverse effects of prohibited substances on health 	<p style="text-align: center;"><u>Table tennis</u></p> <ul style="list-style-type: none"> • History of the game. • Introduction of the match.
AUGUST		
<p><u>Ch-6</u> <u>Physical activity environment</u></p> <p><u>Ch-7</u> <u>Test and measurement</u></p>	<ul style="list-style-type: none"> • Know about essential elements of positive sports environment • Behaviour change technique through physical activity. • Exercise guidelines at different stages of growth. • Importance of different tests and measurements in sports • Meaning importance and calculation of B.M.I • Differentiate and identify different body types. 	<p style="text-align: center;"><u>Table tennis</u></p> <ul style="list-style-type: none"> ❖ Training of the skills.

SEPTEMBER

REVISION

NOVEMBER

Ch-8
Fundamentals of anatomy and physiology

Ch-9
Bio-mechanics and sports

- ❖ Functionality of skeleton system and muscles.
- ❖ Function, importance and role of circulation system
- ❖ Circulation and effect of blood during rest and exercise.

- ❖ Laws of motion and its applicability in sports
- ❖ Leavers types and its applicability in sports
- ❖ Equilibrium and force with its applicability

Badminton

- History of the game.
- Court measurement.
- Introduction of match.

DECEMBER

Ch-10
Psychology and sports

Ch-11
Training in sports

- ❖ Know about different stages of development
- ❖ Awareness and Managing techniques of adolescent problems
- ❖ Techniques of learning and transferring learning in sports.

- ❖ Importance of sports training
- ❖ Techniques and importance of warming up and cooling down
- ❖ Concepts and techniques of load, recovery and adaptation for sports.
- ❖ Different skills, techniques and style relevant for sports.

Badminton

- Training of the skills.

INFORMATIC PRACTICES

UNITNO. & LESSON KEY CONCEPTS	LEARNING OBJECTIVE	PRACTICAL
----------------------------------	--------------------	-----------

APRIL

<p>Ch-1 Hardware Concepts Functioning of Computer Types of Computer I/O and Memory Devices E-Waste Disposal</p> <p>Ch-2 Software Concepts Types of Software Security System Firewall</p> <p>Chapter-3 Getting Started with Programming using IDE Java Byte code, JVM and characteristics of JAVA</p>	<ul style="list-style-type: none"> • To explain functional components of Computer • To define types of computer • To identify I/O and Memory Devices • To explain process of e-waste disposal and its benefits • To draw and explain flow chart of software • To understand to importance of security system • To explain JAVA as programming as well as platform for other application. • To define Java Byte code, JVM and characteristics of JAVA 	<p>Making simple Java programs</p>
---	--	------------------------------------

Reference Book/web link: <http://www.computerhope.com/issues/ch000039.htm> , : <http://www.javatpoint.com/java-programs>

MAY

<p>Chapter-4 Programming Fundamental Keywords, Literals Identifiers, Operator, Separators Operators in Java</p>	<ul style="list-style-type: none"> • To define Keywords, Literals Identifiers, Operator, Separators • To make programs using operators- Arithmetic, Increment/Decrement, Relational, Logical, Assignments operators 	<p>Making programs using operators- Arithmetic, Increment/Decrement, Relational, Logical, Assignments operators</p>
--	---	---

Reference Book/web link: : <http://www.javatpoint.com/java-programs>

JULY

<p>Chapter-5 Flow of Control Selection Statements- The IF statement of JAVA The Switch Statement The While loop Nested Loop Comparison of Loops</p> <p>Chapter-6 Java IDE Programming-I Classes and Object</p>	<ul style="list-style-type: none"> • To make program using- The IF statement of JAVA The Switch Statement The While loop Nested Loop • To make different programs using Loops • To define class and Objects • To define class in the program • To define types of members in a class 	<p>Making programs using- The IF statement of JAVA The Switch Statement The While loop Nested Loop</p>
--	---	--

Reference Book/web link: : <http://www.javatpoint.com/java-programs>

AUGUST

Chapter-7 Java IDE Programming-II Swing Components- Text fields, Text Area,	<ul style="list-style-type: none">• To use swing components- Textfields, Text Area, Label, Buttons Combobox and list to make various Java programs	Creating Java programs using Netbeans Swinh controls
---	--	--

Reference Book/web link: : <http://www.javatpoint.com/java-programs>

SEPTEMBER

REVISION

OCTOBER

Chapter-8 Java IDE Programming-III Label, Buttons Combo box and list Chapter-9 Programming Guidelines characteristics of good program types of error Debugging, testing and Run a program Chapter-10 DBMS Concepts Purpose of DBMS Data Models	<ul style="list-style-type: none">• To use swing components-, Label, Buttons Combobox and list to make various Java programs <p>To explain characteristics of good program</p> <p>To identify types of error</p> <p>To debug, test and run a Java program</p> <p>To understand the purpose of DBMS</p> <ul style="list-style-type: none">• To define different types of Data Models	Creating programs using swing components-, Label, Buttons Combobox and list Finding error to run program
---	---	---

Reference Book/web link: <https://en.wikipedia.org/wiki/Database>

NOVEMBER

Chapter-11 Introduction to MYSQL History of MYSQL MYSQL and SQL Chapter- 12 Simple Queries in SQL MYSQL Elements- Literals, Data Types, Null Values, Comments Making simple Query Chapter-13 MYSQL Function String Function Numeric Function Date/Time Function	<p>To know about MYSQL To explain MYSQL and SQL</p> <p>To identify MYSQL Elements- Literals, Data Types, Null Values, Comments in MYSQL program To create simple Query</p> <p>To create query in MYSQL using String Function Numeric Function Date/Time Function</p>	Creating simple query in MYSQL Creating query in MYSQL using String Function Numeric Function Date/Time Function
---	--	---

Reference Book/web link: <https://dev.mysql.com/doc/refman/5.5/en/programs.html>

DECEMBER

Chapter-14 Table Creation & Data Manipulation Commands Creating database Creating table Alter table	To Create database To Create table To Alter table	Creating database Creating table Alter table
Chapter-15 IT Application E-Governance- Objective, Challenges Major E-Governance Projects in India Societal Impact	To know E-Governance- Objective, Challenges To explain Major E-Governance Projects in India To explain Societal Impact of E-Governance	
E-Business- Types Challenges Major E- Business Projects in India Societal Impact	To know E-Business-Types, Challenges To explain Major E- Business Projects in India To explain Societal Impact of E-Business	
E-Learning- Benefits, Limit and advantages	To tell benefits, limit and advantages of E-Learning	

Reference Book/web link: <http://the-social-impacts.blogspot.in/>

JANUARY-FEBRUARY

PROJECT WORK