TAGORE INTERNATIONAL SCHOOL
EAST OF KAILASH, NEW DELHI

PARENT SYLLABUS -CLASS XI SCIENCE
APRIL- SEPTEMBER (SESSION 2020– 21)

Subject	No. of period / Topics Covered	Learning Outcome	Activities	Assessments
ENGLISH				
April / May	**Prose: The Portrait of a Lady** by, Khushwant Singh **No. of periods: 4**	To develop a sense of responsibility towards elderlies To develop optimistic attitude towards life amidst many struggles To develop an attitude to become more independent in thought and action To develop the understanding of others' emotions and tolerance	Group discussion- characteristics/ habits of elderly members of the family Loud and Silent Reading Paraphrasing and Explanation Discussion and writing of Q/As Brainstorming- How to make elderlies feel welcomed and accepted **Art Integrated Activity:** Design an attractive web-chart on your grandparent's favourite game. Include all the relevant details like- number of players, playing arena required, rules etc.	Quiz using google form Worksheets Writing Q/As
	Poem: A Photograph by, Shirley Toulson **No. of periods- 3**	To enable the students to grasp the theme and meaning of the poem To enable the students to read the poem with proper tone and rhyme and develop an interest in poetry	Group discussion- Importance of a photograph/ memories of the past Recitation of the poem and Paraphrasing Identifying poetic devices incorporated in the text	Worksheets Writing Q/As

		To enable the students to draw a comparative study between human life and nature. To make the students study a photograph closely and appreciate its significance.	Discussion and writing of Q/As **Art Integrated Activity:** Composing a short poem on a favourite photograph/ past memory	
	<u>Prose:</u> We Are Not Afraid to Die …If We Can Be All Together by, Gordon Cook & Alan East **No. of periods- 5**	To enhance the students' problem solving skills. To inculcate the values of determination and will power To make the students learn to be optimistic and overcome struggles and problems To enable the students to solve HOTS and value based questions from the lesson.	Brainstorming: How do determination and courage bring people out of trouble. Silent and Loud reading Paraphrasing and Explanation Discussion and writing of Q/As **Art Integrated Activity:** Design a display advertisement for a sea trip organized by Voyagers, a travel agency.	Quiz using google form Worksheets Writing Q/As
	Poem: The Laburnum Top by, Ted Hughes **No. of periods- 3**	To enable the students to grasp the theme and meaning of the poem To enable the students to recite the poem with proper tone and rhyme and To develop students' interest in poetry To enable the students to draw a comparative study between human life and nature.	Brainstorming: How do birds and trees benefit each other Discussion: use of the poetic devices imagery and metaphor in the poem Loud and Silent Reading Paraphrasing and Explanation Discussion and writing of Q/As	Quiz using google form Worksheets Writing Q/As

		To make the students understand the importance of interdependence and living in harmony		
	Short Writing Skill- Advertisement **No. of periods- 2** **(will be continued in July)**	To make students utilize their creativity To enable the students to identify the important aspects of advertising To develop the writing and presentation skills	Group discussion: Importance of advertisements/ Format/ Dos and Don'ts Drafting and designing the classified and display Ads.	Handout Practice Assignment
July	**Prose:** **The Summer of the Beautiful White Horse** **(3)**	Each student will be able to • enhance her/his problem solving skills by discussing the given issue with the peers • identify the literary devices • enlist at least 3-4 characteristics of the protagonist • write relevant answers	• interpretation of the title • discussion on the issue- why people find it difficult to stay honest • critical analysis of the plot and characters	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet (submission of work)
	Poster Designing **(2)**	Each student will be able to- • enlist the components of a good poster • draft attractive posters following the format	• **Art Integrated Activity** Poster Making: 'Against Cruelty Towards Animals' • Designing posters	
	Long Writing Skills: **Letters to the Editor** * **Official Letters (Asking for and giving information)**	Each student will be able to- • discuss the format and phrases to be used for writing the letters	• Discussion of the format • Creating mind-map/ flowchart • Drafting formal letters	

	(2) **Discovering Tut: The Saga Continues** **(3)** **Reading:** **Note Making and Summarization** **(2)**	• express their views through a letter using grammatically correct sentences Each student will be able to- • identify and discuss the scientific advancements that have taken place in the recent past that affected archaeology • comment on the significance of the Egyptian pyramids/tombs • critically analyze the language and Tutankhamun's dynasty • prepare visually attractive and informative virtual museum • comprehend the gist of the given passage for note making • make notes on the passage read	• Discussion- How is modern archaeology different fror the old one • Critically appreciating the language • Critically analyzing Tutankhamun's saga • **Art Integrated Activity** Preparing a virtual museum • Discussion of the given passage • Extraction of important points from the passage Practicing the given exercise based on the previous year CBSE paper	
August	**Prose:** **The Address** **(3)**	Each student will be able to- • comment on the outcome of wars and the hardships that follow them	• Group discussion: The aftermath of the wars • Group discussion to extract important points from the story • **Art Integrated Activity:** recording anecdotes related to a favourite possession in form of a story	**Friday Test (Aug-Sep 202 14.08.2020** • Online quiz using Google forms • Class participation (written and oral)

		• discuss about the human dilemma that follows war and the death of a loved one • critically appreciate the lesson and characters	OR Introducing one's connection/ closeness with a favourite possession through an illustration	• Weekly assignment/worksheet (submission of work)
	Prose: **Ranga's Marriage** **(3)**	Each student will be able to- • talk about at least two changes that have taken place in the modern social set-up to prove that the society has moved a long way from the way the marriage is arranged in the story • supply evidences from their experiences to prove how the perceptions of the astrologers are based more on hearsay and conjecture than what they learn from the study of stars • critically analyze the plot and the characters	• Group discussion: How the concept of marriage has undergone changes over years • Paraphrasing and Explanation • Discussion and writing of Q/As • **Art Integrated Activity:** designing an invitation card	
	Poem: The Voice of the Rain **(3)**	• to grasp the theme and meaning of the poem	• Silent and Loud Reading • Paraphrasing and Explanation • Discussion and writing of Q/As	

		• to recite the poem with proper tone and rhyme and • comment on the significance of the water cycle • draw comparison between human life and nature by giving at least two examples	• **Art Integrated Activity:** Sketching/ painting an illustration to bring out the theme of the poem OR Preparing a colourful mind-map OR Composing a short poem / haiku on a similar theme	
	Long Writing Skill: **Article Writing** * **(1)** **Integrated Grammar Practice** **(2)**	Each student will be able to- • correctly tell the format of the article • discuss the dos and don'ts of the given writing skill • to discuss the significance of the grammatical concepts • complete the worksheets	• Group discussion**:** dos and don'ts, to determine th important points/details that should be provided in the articles • Discussion related to the grammatical rules Practicing the exercises given in the worksheets	
September	**Short Writing Skill: Notice** **No. of classes- 2**	Each student will be able to • Discuss the format and dos and don'ts	• Group discussion to establish dos and don'ts, to determine the important points/details • **Drafting** of the circulars/notices	• Online quiz using Google forms • Class participation

		• write a notice answering the questions, what, where, when, how		(written and oral) • Weekly assignment/worksheet (submission of work)
	Prose: **Landscape of the Soul** **(3)**	Each student will be able to • differentiate between Chinese and European art • analyze the theme and write their interpretation of the title	• Group discussion on the interpretation of the title and the concept of *shanshui*. • Silent and Loud reading • Discussion and writing of Q/As • Group discussion to establish dos and don'ts, to determine the important points/details • Drafting of the speech	
	Long Writing Skill: Speech Writing **No. of classes- 2**	Each student will be able to • Discuss the format and dos and don'ts • write an article as per the format with appropriate expressions and content • analyse the passage independently • find the answers to the questions	• **Group discussion** to get to the appropriate answers • **Writing** answers	
	Reading Comprehension: Unseen Passage **No. of classes- 1** **ASL**	listen to the audio carefully and find answers to the questions asked express themselves clearly and confidently	• **Listening** to the audio clips • **Completing** the worksheet provided **Speaking** on a given theme and answering questions during the interview	Worksheet Personal interview
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Physics

April / May	**Units and Measurements (6 periods)**	Each student will be able to-- *Explain the need for measurement and the role of units in the same. * Relate the process of measurement as a comparison between the standard unit and the quantity to be measured to practical application. * Relate to the advantages of SI system of units through examples. * Differentiate between derived and fundamental units. * Derive the dimensions of some common physical quantities. *Categorize quantities as dimensional variables/constants dimensionless variables/constants on the basis of dimensions. *Use dimensions to check correctness of a given equation, And convert from one system of unit to another.	List the changes in the definition of some of the standard units after watching the instructional video.	Weekly assignment questions.
	Units and Measurements (10 periods)	Each student will be able to- * Apply dimensions to deduce relationship between different physical quantities. * Distinguish between the different types of errors (at least three points). * Relate the concept of accuracy and precision to daily life measurements. * Obtain the equation for absolute error, mean absolute error, relative error and %age error. * Mathematically derive the equations for absolute errors in propagation of errors in addition, subtraction , multiplication and division.	* Relate the concept of accuracy and precision to daily life measurements	Practice worksheets/Worksheet on Objective type questions. *Objective and Short Answer based questions using Google form.

	Kinematics- Motion along a straight line **(4 periods**	* Apply the formulae and solve practice questions. Each student will be able to- - Relate to daily life situation to differentiate between rest and motion. - Explain with example how rest and motion are relative terms. - Explain the difference between distance and displacement with reference to real life situation. - Draw graphs to represent motion along a straight line (distance/ displacement- time graphs, speed/velocity time graphs) - Conclude the conditions needed for an object to be in uniform and non uniform motion along a straight line. - Draw graphs to represent uniform and non uniform motion along straight line.	***Art integration based activity**: Time is a very important component of motion. If an object's position does not change over a period of time, its said to be at rest and if it changes ,then its in motion.Time also has had a significant influence in the world of art. Artists have depicted various symbols of time. **Create a collage on the Concept of Time portrayed in Art,** using the various symbols of time. Use a A4 sheet (preferably white) for the purpose .	Worksheet on Objective type questions. *Weekly assignment questions.
July	**Kinematics : Motion in a plane** **(13 classes)**	Each student will be able to-- -differentiate between scalar and vector quantities. -list the different types of vectors and diagrammatically represent them. -state the laws of vector addition. -compare scalar and vector product of two vectors. -apply formulae and solve numerical related to vector algebra. - represent the rectangular component of vectors by mathematical equation. - represent horizontal projectile and angular projectile diagrammatically. - list examples (at least two each) for horizontal and angular projectile. -derive mathematical equations for trajectory, time of flight, height and	Students will - create their own mind map / flow chart on terms/concepts related to scalars and vectors. - identify at least three different types of vectors in their study room and draw the same. -mark the various components of velocity on a horizontal and oblique projectile at different positions. **Lab activity** : demonstration of experiment using O labs: To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Calipers and hence find its volume. **Art Integration Activity : Creative Corner- let your creativity speak –** Using any one of the given **performing art form ie music(self composed song), dance, acting or poetry recitation**, each student has to submit **a presentation of not more than 2 minutes** on any one of the topics	Online quizzes using Google Form Class participation (written + oral) Weekly assignments/worksheets (submission of work) Art Integration Activity Assessment 1(31.7.20)

		range for horizontal as well as angular projectile. -apply formulae and solve related numerical.	given below *Scalars and Vectors/*Projectile motion/*Uniform Circular motion.	
August	**Laws of Motion** **(11 classes)**	Each student will be able to-- -explain the effect of force in terms of the different changes that it may cause on an object. *** *explain the relation between force and inertia (relate to real life example)* *** *interpret the relation between inertia and mass.* *** *state the laws of motion.* - differentiate between mass and weight. - list the three different types of friction and differentiate between them. - list the causes of friction. - state the laws of friction. - correlate the origin of centripetal forces and derive the dynamics of motion on level curved road and banked curved road. - apply the concepts and formulae logically and solve related numerical.	Students will -prepare a flow chart on the various forces in nature and their origin. ***compare the role of inertia on the force applied with real life examples - graphically represent the variation of frictional force with applied force, mark regions of the three types of friction. - mark the various forces acting on a vehicle negotiating a banked curved road. **Lab activity**: demonstration of experiment using O labs: To measure diameter of a given wire and thickness of a given sheet using screw gauge.	Online quizzes using Google Form Class participation (written + oral) Weekly assignments/worksheets (submission of work)
September	**Work, Energy and Power** **(12 classes)**	Each student will be able to-- -derive relation for work done by constant and variable force. - list different types of energy - correlate between the two types of potential energy with real life examples. - derive expressions for kinetic and potential energy. - state the principle of conservation of energy. - state and prove mathematically work energy theorem. - draw free body diagram of connected system and solve related numerical.	Students will – -draw graphs for force and displacement for constant and variable force, also write at least one example from real life situation. - calculate impulse from force vs time graph. - interpret the type of collision from the values of the coefficient of restitution. **Lab Activity**: demonstration of experiment using O labs: Using a simple pendulum, plot its L-T^2 graph and use it to find the effective length of second's pendulum. **Art Integration Activity:** **Scientific Shutter – Photography** Each student will capture image of a **naturally occurring phenomenon** depicting conversion of one	Online quizzes using Google Form Class participation (written + oral) Weekly assignments/worksheets (submission of work) Art integration Activity

		- differentiate between elastic collision and inelastic collision. - relate the conclusions for various cases of elastic collision to real life situations like in nuclear power plant use of moderators, working of buffers etc.	form of energy to one or more forms of energy. The image should have date and time stamp clearly visible on it. **An appropriate caption and a proper explanation** must be given in writing for the captured image for submission.	
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Chemistry				
April / May	**Some Basic concepts of Chemistry** **No. of periods: 4**	**Each student will be able to:** • Explain the characteristics of three states of matter. • Classify different substances into elements, compound and mixtures. • State & explain various laws of chemical combination and solve atleast related numericals. • Discuss the significance of atomic mass, average atomic mass, molecular mass and formula mass.		. Practice Questions
	Some Basic concepts of Chemistry contd….. **No. of periods: 7**	**Each student will be able to:** • Solve numericals on mole concept. • Calculate the mass percentage of different elements in a compound. • Determine empirical & molecular formula for a compound from the data. • Define limiting reagent. • Solve numericals based on molarity, molality, mole fraction and stoichiometry calculations.	• Sandwich preparation activity discussed (using bread and cheese)- concept of limiting reagent	Practice Worksheet Assessment Worksheet Weekly assignment / practice questions.

	Classification of Elements and Periodicity in Properties **No. of periods: 7** **(will be continued in July)**	**Each student will be able to:** • Discuss the need of classification of elements. • State and explain Dobereiner's Triads and Newland Law of Octaves. • List the merits and demerits of explain Dobereiner's Triads and Newland Law of Octaves. • State Periodic and Modern Periodic Law. • Discuss the basis and features of Mendeleev's and Modern Periodic Table. • List the merits and demerits of Mendeleev's and Modern Periodic Table. • Explain the significance of electronic configuration as the basis of classification. • Explain the features, merits and demerits of Long form of Periodic Table. • Classify the elements into s, p, d & f blocks and compare their characteristics. • Name the elements with Z > 100 according to IUPAC nomenclature. • Predict the position of the elements in the periodic table from the electronic configuration. • Define periodic properties- atomic/ ionic radii, ionization energy and electron affinity • Discuss the trends and exceptions related to the above periodic properties.	**Art Integrated Activity:** Compose a song / rap of your own on the Periodic Classification of Elements. OR Design an artwork (with a suitable title) displaying your understanding and importance for the 'Periodic Table of Chemical Elements'. (Artwork may comprise of drawing, painting, collage, sculpture, two-dimensional construction (Size upto 84 cm x 120 cm max), three-dimensional construction (Size upto 84 cm x 100 x 120 cm max), computer graphic or any other technique).	Online Objective Assessment / Quiz using Google forms. Practice Worksheet Weekly assignment / practice questions. .

		• Solve reasoning based questions on the above trends in the periodic table.		
July	**Classification of Elements and Periodicity in Properties** **No. of periods: 4**	**Each student will be able to:** • Define periodic properties- ionization enthalpy, electron gain enthalpy, electronegativity and chemical reactivity. • Explain the trends and exceptions related to the above periodic properties. • Compare the relationship between ionization enthalpy and metallic character. • Solve reasoning based questions on the above trends in the periodic table.	• Brainstorming for the trends of periodic properties. • Prepare a concept map for the periodic trends using miMind app. • **Lab Activity** **Demonstration of Experiment (OLabs)** • Instructions for Volumetric analysis & experiment demo and format.	• **Online Quiz using Google Forms** • **Class Participation (Oral and Written)** • **Weekly Assignment / Worksheet (Submission of work)**
	Structure Of Atom **No. of periods: 12**	**Each student will be able to:** **** Discuss the experiments related to discovery of electron, proton and neutron. ****Define the terms:atomic number, atomic mass, isotopes and isobars. ****Explain the postulates and limitations of Thomson and Ruherford model (based on scattering experiment). • Draw and explain Electromagnetic spectra. • Differentiate between continuous and discontinuous spectra (Atomic absorption and Atomic emission spectra).	• Group discussion on Discovery of sub –atomic particles and atomic models (Thompson & Rutherford) • Analyse line spectrum of Hydrogen, Draw orbital picture diagrams for different orbitals	• **Online Quiz using Google Forms** • **Class Participation (Oral and Written)** • **Weekly Assignment / Worksheet (Submission of work)**

		• Define & explain Black body radiation, Planck's Quantum theory and Photoelectric effect. • Discuss the postulates and limitations of Bohr atomic model. • Draw and explain the line spectrum of Hydrogen atom. • Derive de Broglie equation and formula for Heisenberg's Uncertainty Principle. • Solve numerical on de Broglie equation and Heisenberg's Uncertainty Principle. • Discuss the basis and postulates of Quantum mechanical model. • Discuss the properties of different types of orbitals (s, p, d, f). • Draw orbital picture diagrams for s, p and d orbitals. • Interpret the quantum numbers for a given notation. • State and explain the rules involved in the filling of orbitals. • Predict the electronic configuration of the different species (atoms, ions). • Discuss reason for the exceptional configurations. • Solve reasoning and application based questions on the above topics.	• **Lab Activity** **Demonstration of Experiment (OLabs)** • Determine the strength of the given NaOH solution by titrating it against M/10 HCl solution. • Determine the strength of the given NaOH solution by titrating it against M/20 Oxalic acid solution. • Determine the strength of the given Na_2CO_3 solution b titrating it against M/10 HCl solution.	
August	**s block Elements** **No. of periods: 8**	**Each student will be able to:** • Write the electronic configuration of all the members of group 1.	• **Brainstorming on** periodicity in properties like- atomic size, valency, metallic and non- metallic of group 1 & 2	• **Online Quiz using Google Forms**

		• Explain the periodic, physical and chemical properties of group 1 elements. • Discuss the general characteristics of the alkali metals and their compounds. ****Write the equations for the preparation & properties of industrially important compounds of sodium (NaCl, NaOH, Na_2CO_3, $NaHCO_3$). • Discuss anomalous behaviour of Llithium. • Explain diagonal relationship shown by Na and its reasons. ****Explain the biological significance of Na & K. • Write the electronic configuration of all the members of group 2. • Explain the periodic, physical and chemical properties of group 2 elements. • Discuss the general characteristics of alkaline earth metals and their compounds. ****Write the equations for preparation and properties of industrially important compounds of Calcium. • Explain anomalous behaviour of Beryllium. • Explain diagonal relationship shown by Be and its reasons. ****Explain the biological significance of Mg & Ca.	elements. • **Lab Activity** **Demonstration of Experiment (OLabs)** • Qualitative analysis instructions for the classification and the chemical tests of acidic radicals (anions). • Qualitative analysis instructions for the classification and the chemical tests of acidic basic radicals (cations). • To determine an anion and a cation present in the given salt sample (WRITING FORMAT) • **Art Integration Activity** **FLAME MAGICK** **(Colour Wheel Activity)** Represent the different flame colouration shown by compounds of s-Block elements in the form of a colour wheel pattern (2-D / 3-D) discussing the principle involved in the flame test.	• **Class Participation (Oral and Written)** • **Weekly Assignment / Worksheet (Submission of work)** • **Assessment Round I** **(07.08.2020)** • **Art Integration**

	Redox Reactions **No. of periods: 8**	**Each student will be able to:** • Define the terms oxidation, reduction, oxidizing & reducing agent in terms of classical concept and electronic concept. • Cite examples for redox reactions in terms of classical, electronic & Oxidation number concept. • Discuss the term disproportionation reaction. • Apply the rules to calculate oxidation number for an element in different species. • Balance redox reactions using half reaction & oxidation number method. • Learn the concept of redox reactions in terms of electrode process (Galvanic cell) and electrochemical series. ****Apply electrochemical series to determine the relative strength of oxidants and reductants and feasibility of reactions.	• Prepare a mind map for basis to classify oxidation and reduction & types of redox reactions using miMind app • **Lab Activity** **Demonstration of Experiment (OLabs)** • To determine an anion and a cation present in the given salt samples. (Group 0 – Ammonium salts) • To determine an anion and a cation present in the given salt samples. (Group 1 – Pb salts)	• **Online Quiz using Google Forms** • **Class Participation (Oral and Written)** • **Weekly Assignment / Worksheet (Submission of work)**
September	**Chemical Bonding and Molecular Structure**	**Each student will be able to:** • Discuss Kossel- Lewis approach to chemical bonding.	• Comparison between ionic and covalent compounds	• **Art Integration** • **Online Quiz using Google Forms**

	No. of periods: 16	• State and explain octet rule & its limitations. • Depict the formation of different types of bonds. • Draw Lewis dot structure & hence calculate formal charge on each atom of the molecule. • Explain the valence bond approach to covalent bond. • Differentiate between σ & π bonds. • Predict the directional properties of covalent bond. • Discuss the concept of Resonance & also draw the resonating structures. • Draw and explain the hybridization patterns for different molecules. • Apply VSEPR Theory to predict the geometries of molecules. • Define dipole moment and discuss its applications. • Explain H-bonding and its requirements. • Differentiate between inter and intra molecular hydrogen bonding. • Explain the postulates of Molecular Orbital Theory. • Differentiate between bonding and anti bonding molecular orbitals. • Draw the energy level diagrams of homo diatomic molecules to predict their magnetic behavior.	• Students will be asked to prepare their own ball and stick models and explain the structures of the molecules. • **Art Integration Activity** **3-D Ball and Stick models** Design your own 3-D ball and stick models (atleast three) for explaining the structure of compounds. • **Lab Activity** **Demonstration of Experiment (OLabs)** • To determine an anion and a cation present in the given salt samples. (Group 3 - Al salts) • To determine an anion and a cation present in the given salt samples. (Group 5 - Ba, Sr, Ca salts)	• **Class Participation (Oral and Written)** • **Weekly Assignment / Worksheet (Submission of work)**
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Biology				
April / May	Morphology of Flowering Plants (8)	Each student will be able to: • name two types of root system and give example of each • draw diagram to show regions of root tip • state the modifications of root, stem and leaf • differentiate between racemose and cymose inflorescence • compare hypogynous, perigynous and epigynous flowers • explain the four main types of aestivation • describe the types of placentation • distinguish between dicot and monocot seed • draw the floral diagrams of Fabaceae, Solanaceae, Liliaceae and mention their floral formula	• Identification of different modifications in roots, stems and leaves as well as different parts of a flower from their pictures • Identification of different types of inflorescence, phyllotaxy, aestivation and placentation from their pictures as well as drawing their diagrams • Creation of floral formula and floral diagram from the features of the families provided	• Google quiz • Practice worksheet • Assessment worksheet • Weekly assignment
	Anatomy of Flowering Plants (9)	Each student will be able to:	• Identification of different types of plant tissues from their pictures.	• Google quiz

		• name the two main groups of plant tissues • explain the various meristematic tissues • compare parenchyma, collenchyma and sclerenchyma • mention three types of tissue systems • compare the anatomy of dicot and monocot plants • describe the formation of secondary growth. • differentiate between heart wood and sap wood	• Comparing the structure, location and function of parenchyma, collenchyma and sclerenchyma • Drawing diagrams of simple and complex tissues as well as different types of vascular bundles • Comparing the anatomical features of monocot and dicot root, stem and leaf with the help of their diagrams	• Practice worksheet • Assessment worksheet • Weekly assignment
	Structural organization in animals (5)	Each student will be able to: • explain the types of animal tissues. • differentiate between simple epithelium and compound epithelium • mention the function of connective tissue • distinguish between tendon and ligament as well as bone and cartilage • state the components of blood	• Identification of different types of animal tissues from their pictures as well as drawing their labelled diagrams • Comparing the skeletal, smooth and cardiac muscles with the help of their diagrams • Study of external morphology of cockroach • Identification of male and female cockroach from the pictures shown	• Practice worksheet • Assessment worksheet • Weekly assignment

	Cell: The Unit of Life (4)	• compare striated, smooth and cardiac muscle • explain digestive system, circulatory system and reproductive system of cockroach Each student will be able to • explain discovery of cell • mention the cell theory • compare plant cell and animal cell as well as prokaryotic cell and eukaryotic cell • state the role of mesosome in prokaryotic cell • mention the structure and function of cell membrane, cell wall, Golgi apparatus, vacuoles, endoplasmic reticulum and lysosomes	• Drawing the diagrams of plant cell and animal cell and labelling their common organelles • Comparing a prokaryotic cell and a eukaryotic cell with the help of their diagrams **Art Integration** **'Edible Cell Model'** Each student will build an edible model of either a plant or an animal cell (cake/pizza/ cookie) using various food items to represent each part/organelle.  **Rubric** Edible content Cell structures/organelles Layout	• Practice worksheet • Assessment worksheet • Weekly assignment

			Creativity Following guidelines **(2 marks each=10 marks)**	
July	Cell: The Unit of Life (3)	Each student will be able to: • explain the structure and function of mitochondrion and draw its diagram • name the three types of plastids and state their functions • describe the structure of chloroplast and draw its diagram • compare the electron microscopic structure of cilia/flagella and centriole • draw three types of chromosomes based on the position of centromere	• Identification of different cell organelles from their pictures as well as drawing their labelled diagrams • Comparing three types of plastids on the basis of their pigments and function • Drawing three types of chromosomes based on the position of centromere	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet • (submission of work)
	Biomolecules (7)	Each student will be able to: • give two examples of biomacromolecules • give reason as to why lipids are not biomacromolecules	• Diagrammatic representation of small molecular weight organic compounds in living tissues • Drawing four levels of protein structure and secondary structure of DNA	• Online quiz using Google forms • Class participation (written and oral)

		• list the functions of proteins, carbohydrates and nucleic acids • explain four levels of protein structure • describe the structure of DNA • mention three properties of enzymes and explain their functions • explain activation energy of enzymes • list three factors affecting the functions of enzymes • state three kinds of cofactors and mention their application.	• Drawing graphs to show the effect of change in pH, temperature and concentration of substrate on enzyme activity • **Demonstration of experiment (OLABS)** Study and description of three locally available common flowering plants, one from each of the families Solanaceae, Fabaceae and Liliaceae including study of floral whorls, anther and ovary (floral formulae and floral diagrams).	• Weekly assignment/worksheet • (submission of work)
	Cell Cycle and Cell Division (6)	Each student will be able to • explain cell cycle • state three processes which take place in interphase	• Identification of the various stages of mitosis and meiosis from their pictures as well as drawing their diagrams • **Demonstration of experiment (OLABS)** Study of distribution of stomata in the upper and lower surface of leaves	• Online quiz using Google forms • Class participation (written and oral)

		• mention the significance of mitosis • describe the different stages of mitosis with the help of labelled diagrams • compare cytokinesis in plant cell and animal cell • differentiate between mitosis and meiosis • explain the significance of meiosis • describe the different stages of meiosis I with the help of labelled diagrams	**Art Integration** **'Song'/ 'Rap'** Each student will compose a song/rap on the changes which take place in a cell during cell division (mitosis/meiosis	• Weekly assignment/worksheet (submission of work) Art integrated learning
	Transport in Plants *(2)* ****	Each student will be able to: • mention two factors affecting the rate of diffusion	• Identification of facilitated diffusion and plant cell plasmolysis from their pictures • Comparison of symplast and apoplast pathways of movement of water with the help of their diagrams	• Online quiz using Google forms

		• explain the role of protein pumps during active transport • give reason as to why pure water has maximum water potential • draw diagram to show plant cell plasmolysis • differentiate between imbibition and diffusion • state mass flow hypothesis • compare apoplast and symplast pathways of movement of water in plants • justify that transpiration is a necessary evil • list the factors responsible for ascent of xylem sap in plants • describe pressure flow hypothesis of translocation of sugar in plants	• Diagrammatic representation of the mechanism of transpiration and translocation and the comparison of two mechanisms • **Demonstration of experiment (OLABS)** Study of osmosis by potato osmometer	• Class participation (written and oral) • Weekly assignment/worksheet (submission of work) • Assessment Round II (24.07.20)
	Mineral Nutrition *(2)* *****	Each student will be able to: • list four broad groups of essential elements	• Making a flow chart to show macronutrients and micronutrients	• Online quiz using Google forms • Class participation

		• mention the criteria for essentiality of an element in plant • state the importance of various minerals for the growth of plants and mention their deficiency symptoms • differentiate between active and passive absorption • describe the process of nitrogen fixation in plants • explain the process of development of root nodules in plants	• Diagrammatic representation of the nitrogen cycle showing relationship between the three main nitrogen pools -atmosphere, soil and biomass as well as development of root nodules in soyabean • **Demonstration of experiment (OLABS)** Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves).	(written and oral) • Weekly assignment/worksheet • (submission of work)
	Photosynthesis in Higher Plants (3)	Each student will be able to: • state the importance of photosynthesis • mention the site of photosynthesis • name four pigments involved in photosynthesis • explain the structure of chloroplast and its role in photosynthesis • compare cyclic and non-cyclic photophosphorylation	• Identification of graph showing the absorption spectrum of chlorophyll a, b and the carotenoids • Comparison of cyclic photophosphorylation and non-cyclic photophosphorylation with the help of their diagrams • Diagrammatic representation of Calvin cycle and Hatch and Slack pathway • **Demonstration of experiment (OLABS)** Separation of plant pigments through paper chromatography.	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet (submission of work) • Art integrated learning

		• illustrate Calvin cycle and Hatch and Slack pathway • differentiate between the anatomy of leaf in C_3 and C_4 plants • explain the process of photorespiration • list the various factors affecting the process of photosynthesis	**Art Integration** **'Model using waste material'** Each student will create a model of the internal structure of chloroplast using waste material	
August	Photosynthesis in Higher Plants (contd.) (7)	Each student will be able to: • compare cyclic and non-cyclic photophosphorylation • illustrate Calvin cycle and Hatch and Slack pathway • differentiate between the anatomy of leaf in C_3 and C_4 plants • explain the process of photorespiration • list the various factors affecting the process of photosynthesis	• Comparison of cyclic photophosphorylation and non-cyclic photophosphorylation with the help of their diagrams • Diagrammatic representation of Calvin cycle and Hatch and Slack pathway • **Demonstration of experiment (OLABS)** Separation of plant pigments through paper chromatography.	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet (submission of work)
	Respiration in Plants (7)	Each student will be able to	• Making a one-line flow diagram to show steps of glycolysis.	• Online quiz using Google forms

		• name two types of respiration and compare them • explain glycolysis and fermentation • mention two steps of glycolysis in which ATP is utilized • illustrate the citric acid cycle • describe electron transport system • justify that aerobic respiration is more efficient • give reason as to why respiratory pathway is called amphibolic pathway	• Diagrammatic representation of the citric acid cycle and electron transport system • Making a flow chart to show interrelationship among metabolic pathways showing respiration mediated breakdown of different organic molecules to carbon dioxide and water • **Demonstration of experiment (OLABS)** Study of the rate of respiration in flower buds/leaf tissue and germinating seeds	• Class participation (written and oral) • Weekly assignment/worksheet • (submission of work)
	Plant Growth and Development (2)	Each student will be able to: • describe the characteristics, discovery, physiological effects and application of various plant growth regulators	• Making a flow chart to show various plant growth regulators	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet (submission of work) • Assessment 1 (21.08.2020)

	Plant Growth and Development (1) ****	*Each student will be able to:* • *state the characteristics and conditions for growth* • *name the three phases of growth* • *plot graphs to show arithmetic and geometric growth* • *explain differentiation, dedifferentiation and redifferentiation* • *explain the significance of photoperiodism and vernalization*	• *Plotting graphs to show arithmetic and geometric growth* • ***Demonstration of experiment (OLABS)*** *Study of T.S. of dicot and monocot roots and stems (primary).*	• *Online quiz using Google forms* • *Class participation (written and oral)* • *Weekly assignment/worksheet (submission of work)*
	Digestion and Absorption (2) ****	*Each student will be able to:* • *list the organs of human alimentary canal in sequence* • *draw a well labeled diagram of human digestive system.* • *explain the structure and function of different parts of alimentary canal*	• *Identification of different parts of the alimentary canal and drawing its labelled diagram* • *Identification of different types of teeth in the jaw on one side* • *Diagrammatic representation of transverse section of gut* • ***Demonstration of experiment (OLABS)*** *Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials*	• *Online quiz using Google forms* • *Class participation (written and oral)* • *Weekly assignment/worksheet (submission of work)*

		• *name the different types of teeth and their number in an adult human* • *state the dental formula of human beings* • *describe the mechanical and chemical processes involved in digestion of food* • *explain absorption of digested products in humans* • *mention any two disorders of digestive system*		
September	Breathing and Exchange of gases (7)	Each student will be able to: • name the respiratory organs of fish, earthworm, insects and mammals • explain human respiratory system • draw respiratory system of human beings • list the steps involved in respiration • differentiate between inspiration and expiration • describe exchange and transport of gases • draw oxygen dissociation curve • name any two disorders of respiratory system	• Identification of different parts of the human respiratory system and drawing its labelled diagram • Comparison of the process of inspiration and expiration with the help of their diagrams • Diagrammatic representation of exchange of gases at the alveolus and the body tissues with blood and transport of oxygen and carbon dioxide • Diagrammatic representation of a section of an alveolus with a pulmonary capillary • Drawing of oxygen dissociation curve • **Demonstration of experiment (OLABS)** Tissues and diversity in shape and size of animal cells (squamous epithelium, smooth, skeletal and cardiac muscle fibers)	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet • (submission of work)

	Body Fluids and Circulation (8)	Each student will be able to • mention the different components of human blood and state their functions • list the four types of blood groups and their donor compatibility • give reason as to why the wound does not continue to bleed for a long time • state the function of lymphatic system. • differentiate between open and closed circulatory system. • draw and explain the structure and function of human heart • mention the use of ECG and pacemaker. • state the significance of double circulation • name any two disorders related to circulatory system	• Identification and diagrammatic representation of formed elements in blood • Showing the correct matching of the blood group of a recipient with that of a donor in a tabular form • Diagrammatic representation of a section of a human heart • Diagrammatic presentation of a standard ECG and identification of the different segments in it • Representation of schematic plan of blood circulation in humans • **Demonstration of experiment (OLABS)** Tissues and diversity in shape and size of animal cells (mammalian blood smear)	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment / worksheet (submission of work)

	Excretory Products and their elimination (7)	Each student will be able to: • give reason as to why terrestrial animals are generally either ureotelic or uricotelic but not ammonotelic • name the parts of human excretory system • draw labelled diagram of human excretory system • explain the structure of kidney and nephron with the help of diagrams • describe the process of urine formation • state the function of proximal convoluted tubule, Henle's loop, distal convoluted tubule and collecting duct • explain the counter current mechanism • describe the regulation of kidney function • state the role of lungs, liver and skin in the elimination of wastes from the body • mention any two disorders of the excretory system	• Identification of the parts of human excretory system and drawing its labelled diagram • Diagrammatic representation of the longitudinal section of kidney as well as a nephron showing blood vessels, duct and tubule • Representation of the reabsorption and secretion of major substances at different parts of the nephron • Diagrammatic representation of a nephron and vasa recta showing counter current mechanisms • **Demonstration of experiment (OLABS)** Test for presence of sugar in urine. Test for presence of albumin in urine. **** *Test for the presence of urea in urine* ****Test for the presence of bile salts in urine*	• Online quiz using Google forms • Class participation (written and oral) • Weekly assignment/worksheet (submission of work)

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Computer Science

April / May	**Unit II: Computational Thinking and** Programming - 1 Familiarization with the basics of Python programming: a simple "hello world" program, the process of writing a program (Interactive & Script mode), running it and print statements; simple data-types: integer, float and string. ● Features of Python, Python Character Set, Token & Identifiers, Keywords, Literals, Delimiters, Operators. ● Comments: (Single line & Multiline/ Continuation statements), Clarity & Simplification of expression ● Introduce the notion of a variable and methods to manipulate it (concept of L-value and R-value even if not taught explicitly). ● Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence. ● Operators & types: Binary operators- Arithmetic, Relational Operators, Logical Operators, Augmented Assignment Operators. ● Execution of a program, errors- syntax error, run-time error and logical error. ● Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number. ● Notion of iterative computation and control flow: for(range(),len()), while, using flowcharts, suggested programs: calculation of simple and compound interests, finding the factorial of a positive number etc.	*Students will be able to–* ➢ state the purpose behind algorithms and flowcharts. ➢ Identify different shapes of flowchart ➢ use each shape in a flowchart. ➢ Define data and identify different data types. ➢ Understand rules of naming variables and identifying datatypes ➢ Be able to assign proper variable names. ➢ Use the statements according to syntax and in proper sequence. ➢ Identify the different types of operators used in PYTHON. ➢ Use the operator according to requirement in the program ➢ use the statements according to the syntax ➢ form proper condition checking statements ➢ differentiate among looping statements di ➢ use these statements in programs ➢ Use if..else statements in a program ➢ Use loops to create applications	Worksheets & Assignments	**Lab Test**
	Unit I: Computer Systems and Organisation	*Students will be able to–.* ➢ Identify different number systems	Worksheets & Assignments	**MCQs** **Class Test**

	Number System: numbers in base 2, 8, 16 and binary addition Programs for Number Conversion Boolean logic: NOT, AND, OR, NAND, NOR, XOR, NOT, truth tables and De Morgan's laws, Logic circuits	➢ Convert numbers from one system to other ➢ Identify different types of gates ➢ Design circuits diagrams ➢ Write equations for different circuit diagrams		
July	**Unit I: Computer Systems and Organisation** ● Basic computer organisation: description of a computer system and mobile system, CPU, memory, hard disk, I/O, battery. ● Types of software: Application software, System software and Utility software. ● Memory Units: bit, byte, MB, GB, TB, and PB. ● Concept of Compiler and Interpreter ● Operating System (OS) - need for an operating system, brief introduction to functions of OS, user interface ● Encoding Schemes : UTF8, UTF32 ****** ● **Concept of cloud computing and cloud services (SaaS,IaaS,PaaS), cloud (public/private), Blockchain technology******** **Unit II: Computational Thinking and** Programming - 1 Strings: Traversal, operations – concatenation, repetition, membership; functions/methods–len(), capitalize(), title(), upper(), lower(), count(), find(), index(), isalnum(), islower(), isupper(), isspace(), isalpha(), isdigit(), split(), partition(), strip(), lstrip(), rstrip(), replace(); String slicing. Lists: Definition, Creation of a list, Traversal of a list. Operations on a list - concatenation, repetition, membership; functions/methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), min(), max(), sum(); Lists Slicing; Nested lists; finding the maximum, minimum, mean of	Students will be able to : ➢ Identify parts of a computer system ➢ use the nested loops statements according to the syntax ➢ form proper condition checking statements ➢ use the statements in programs ➢ use functions for different operations- character math , string etc. ➢ create user defined functions ➢ apply concepts of string slicing in programming ➢ use different inbuilt functions in programming	Worksheets & Assignments **Art Integration** Poster making	**Periodic 1-Examination 20+15** Number Systems Boolean Basic Python Practical Exam

	numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list.			
August	**Tuples:** Definition, Creation of a Tuple, Traversal of a tuple. Operations on a tuple - concatenation, repetition, membership; functions/methods – len(), tuple(), count(), index(), sorted(), min(), max(), sum(); Nested tuple; Tuple slicing; finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple. **Dictionary:** Definition, Creation, Accessing elements of a dictionary, add an item, modify an item in a dictionary; Traversal, functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted() copy(); Suggested programs : count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them.	Students will be able to :- ➢ Define Lists/ tuples/ Dictionaries ➢ Appreciate advantages of using Lists/ tuples/ Dictionaries in a program ➢ Work with Lists/ tuples/ Dictionaries using loops ➢ Store data and display data ➢ Identify functions related to Lists/ tuples/ Dictionaries	Worksheets & Assignments **Art Integration** Board Game Designing	Class Test on loops & functions
September	**REVISION FOR MID TERM EXAMS**	**Students** will be able to clarify their doubts in Python and fundamentals	Worksheets & Assignments	**Mid Term-Examination :70 Marks** Python Programming-50 Computer Systems and Organization (CSO) -10 **Practical - 30** Marks
*****	The topics marked with asterisk in the syllabus have been deleted by CBSE for the academic year 2020-21. However, these topics will be covered through discussion in the class to bridge the learning gaps.			
Economics				
April / May	**STATISTICS FOR ECONOMICS** **WHAT IS ECONOMICS**	Each student will be able to: • Understand how economics is linked with the study of economic activities in	• During the day, identify atleast 10 activities undertaken by your family members and categorise them into economic and non-economic activities.	• Worksheets, • Online Quiz/MCQs'

		consumption, production and distribution. • Differentiate 4 points between Economic and Non-Economic activities. • Define Economics. • Distinguish 3 points Economics as Science and Art. • Discuss three points of functions and importance of statistics.	• Brain storming activities used for explaining good and bad impacts of Collected Data. • **Data on Covid** and its presentation in different forms. • Identify activities for Statistics as science or art. • Discussion on " Economics is a study of scarcity". • Discussion on ' Statistics these days is indispensable for dealing with Socio-economic problems'. • **Covid** data-' Statistics is science of counting'. • **Covid** data ' Statistics affects everybody and touches life at many points'. • 'The Government and policy maker use statistical data to formulate suitable policies of economic development'. Illustrate with two examples. • **Covid cases**- economics a positive or normative science	• HOTS questions • Crossword activity.
	PRODUCTION POSSIBILITY **Central problems -** **Production possibilities frontier**	Each student will be able to: • Categorize 4 different activities in an economy as economic or non-economic activity. • Interrelate in 3 points micro and macro concepts. • Apply the law of diminishing marginal utility in different situations in life for different commodities. • Analyse diagrammatically changes that happen when price in the market changes and how the consumer's behaviour changes keeping income given.	• Unemployment is reduced due to measures taken by the government. Identify its economic value. • Discuss the long term impact of Beti Bachao program on India's PPC. • When can there be a. Rotation of PPC. b. Shift of the PPC. c. State whether the following are True or False • Due to this **pandemic** if business from China shifts to India then- impact on the PPC. • Game- dividing the class into 2 resources(guns and butter). Teacher as finance minister has to take a decision on what, how and for whom to produce.	• Worksheets, • Online Quiz/MCQs' • HOTS questions
	DEMAND	Each student will be able to:	What causes the following(Different cases)	

	ELASTICITY OF DEMAND	• Identify the concept of Demand. • Analyse the 4 factors affecting Demand. • Derive the Law of Demand. • Represent the movements and Shifts in demand curve diagrammatically. • Analyse the factors affecting demand. • Interpret the theory related to the calculations of demand to practice by doing the numericals.	a. An upward movement along the demand curve b. A downward movement along the demand curve c. A right shift of the demand curve. d. A left shift of the demand curve. What is the effect on the demand curve of the following: a. Fall/rise in the price of a substitute good b. Fall/rise in the price of a complement good. Find any two ways demand for electricity can be decreased when price elasticity of demand is extremely low.	• Worksheets, • Online Quiz/MCQs' • HOTS questions
July	**Collection of Data** (5)	Each student will be able to: • Relate the topic to day to day activity. • understand the meaning and purpose of data collection. • Identify sources of Data • Classify methods of collection of data as Primary or secondary data on the basis of its collection. • distinguish between primary and secondary sources; • know the mode of collection of data; • be familiar with the techniques of sampling; • Collect information from the informant through personal interview. • Draft a Questionnaire • Conduct Surveys.	• Brain storming activities used for explaining good and bad impacts of Collected Data. • **Data on Covid** of different states. • Assignment for data collection interview your domestic help asking questions on how he/she manages time between work and leisure. • There are 10 students in your school who excel in the game of cricket. All are equally brilliant , but you are to select only 3 for representing your school in the inter zonal cricket tournament. How would you do it. Give details with reasons. • Prepare a questionnaire on should Board exams of CBSE be conducted due to covid pandemic. • You have to collect information from a person, who lives in a remote village of India. Which mode of data collection will be the most appropriate for collecting information from him? • You have to interview the parents about the quality of teaching in a school. If the principal	• Worksheets, • Online assessment - Quiz/MCQs' • HOTS questions • oral questions • practice worksheet

		• Collect information from secondary source . • know about some important sources of secondary data.	of the school is present there, what types of problems can arise? • In which years will the next Census be held in India and China? • If you have to study the opinion of students about the new economics textbook of class XI, what will be your population and sample? • If a researcher wants to estimate the average yield of wheat in Punjab, what will be her/his population and sample? • You have to analyse the trend of foodgrains production in India for the last fifty years. As it is difficult to include all the years, you have to select a sample of production of ten years. Using the Random Number Tables, how will you select your sample?	
	ORGANISATION OF DATA (6)	Each student will be able to: • Define classification. • Identify three objectives of classification and highlight the main methods of classification. • Organize raw data in the form of individual series and Frequency series. • be familiar with the method of tally marking; • Compute continuous series into inclusive or exclusive series. • Compute cumulative series. • Identify upper and lower class limit.	• Can there be any advantage in classifying things, explore with the help of an example from your daily life. • Visit your local post-office to find out how letters are sorted. Do you know what the pin-code in a letter indicates? Ask your postman • Collect data of total weekly expenditure of your family for a year and arrange it in a table. See how many observations you have. Arrange the data monthly and find the number of observations. • Distinguish the following variables as continuous and discrete: Area, volume, temperature, number appearing on a dice, crop	• Worksheets, • Online Quiz/MCQs' • HOTS questions • oral questions • practice worksheet

		• Find the class size, mid value and class frequency. • Convert cumulative series into continuous series.	yield, population, rainfall, number of cars on road, age • From your old mark-sheets find the marks that you obtained in mathematics in the previous classes. Arrange them year-wise. Check whether the marks you have secured in the subject is a variable or not. Also see, if over the years, you have improved in mathematics	
	PRESENTATION OF DATA (12)	Each student will be able to: • Represent Covid cases of the World in tabular, diagrammatic and Graphic presentation. • Represent Cricket scores of the World Cup in tabular, diagrammatic and Graphic presentation. • Explain the parts of a Table • Define tabulation. • Explain the merits of tabulation • Present the data in diagrammatic and Graphic presentation. • Construct Bar diagram, multiple bar diagram, sub divided bar diagram, pie diagram. • Follow various rules for constructing diagrams. • Appreciate the universal utility of a diagram.	• **<u>Data on Covid</u>** and its presentation in different forms. • Construct a table presenting data on preferential liking of the students of your class for Star News, Zee News, BBC World, CNN, Aaj Tak and DD News. • Prepare a table of (i) heights (in cm) and (ii) weights (in kg) of students of your class. • Go to your library and collect data on the number of books in economics, the library had at the end of the year for the last ten years and present the data in a table. • Construct a table presenting data collected from students of your class according to their native states/residential locality • You had constructed a table presenting the data about the students of your class. Draw a bar diagram for the same table.	• Worksheets, • oral questions • practice worksheet • Online Quiz/MCQs' • HOTS questions •

		• Construct Histogram, Polygon and Ogive.	• How many states (among the major states of India) had higher female literacy rate than the national average in 2001?	
August	**MEASURES OF CENTRAL TENDENCY (10)** **POSITIONAL AVERAGE AND PARTITION VALUES (9)**	Each student will be able to: • Reason out the characteristics of a representative average. • understand the need for summarising a set of data by one single number; • Do Computation of mean. • Compute mean in individual series by direct and shortcut methods. • Compute mean in discrete series by direct, shortcut and step deviation methods. • Compute mean in continuous series by direct, shortcut and step deviation methods. • draw meaningful conclusions from a set of data. Each student will be able to: Compute value of Median, Mode, and Quatiles and interpret its result.	• From data on **Covid** of different states compute its mean. • Find average monthly expenditure for your household.	• Worksheets, • Online Quiz/MCQs' • oral questions • practice worksheet • HOTS questions • Worksheets, • Online Quiz/MCQs' • HOTS questions •
September	**Production function and Returns to a Factor** **Supply (15)**	Each student will be able to: • Give the production function.	Ask students to make note of any signs of producers they see. For instance, they might see a label that shows a publishing company for books they see all over	• Worksheets, • Online Quiz/MCQs'

		• Define the law of returns to a factor. • Draw schedule for law of variable proportions. • Infer law of variable proportions in short run production function. • Give reasons for three phases of production in short run. • Define law of supply • Give factors affecting supply	your school. In the community, they might see a storefront for a small business. Then, ask students to come together to share their findings and make a poster representing the most common producers they saw during this walk. • Paper chain factory using four factors of production. Keep increasing variable factor and observe the changes in production that take place.	• HOTS questions
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Physical Education				
April / May	**Unit I Changing Trends & Career in Physical Education (WD: 18)** Meaning & definition of Physical Education Aims & Objectives of Physical Education Career Options in Physical Education Competitions in various sports at national and international level Khelo-India Program	Students will know the changing trends & career in physical education meaning need & importance of physical education its aims & objectives. Career options, NIS, Sports authority of India and its duties, national and international level sports competitions, features and objectives of Khelo India Program etc.	Discussion on physical education & changing trends. Career Options available in physical education. Students to discuss the textual based questions	Questions will be discussed in the class MCQ's
	Unit II Olympic Value Education (WD: 16) Olympics, Paralympics and Special Olympics Olympic Symbols, Ideals, Objectives & Values of Olympism International Olympic Committee Indian Olympic Association	Students will know & differentiate between Ancient Olympic & Modern Olympic games, Values objectives, International & Indian Olympic committee & its organizational set up. Paralympics, Special Olympic Mission, vision etc.	Discussion on Olympics, Special Olympic Mission oath vision Achievements, Paralympics its categories of Disability etc Students to discuss the textual based questions	Questions for home assignment Questions will be discussed in the class

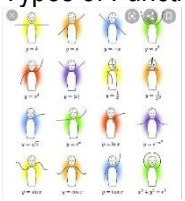
	<u>Unit III Physical Fitness, Wellness & Lifestyle</u> Meaning and Importance of Physical Fitness, Wellness & Lifestyle Components of Physical Fitness and Wellness Components of Health related fitness	Students will know the meaning and importance of Physical Fitness, Wellness & Lifestyle. Components of Physical Fitness and Wellness and Components of Health related fitness (Cardiovascular Fitness, Muscular Strength, Muscular Endurance, Flexibility and Body Composition)	Discussion on Meaning and Importance of Physical Fitness, Wellness & Lifestyle Components of Physical Fitness and Wellness Components of Health related fitness Students to discuss the textual based questions	MCQ's Questions for home assignment
	Game Volley ball History of Volley ball Fundamental skills Court dimensions Equipments dimensions Fundamental skills Terminologies of the game Rules and regulations	Each students will be able to draw volleyball court with all the measurements Equipments and their dimensions.	Discussion on History of volley ball and its equipments	Questions will be discussed in the class
	Athletics History of Athletics Types of Races their starting points and finishing points. Types of field events (Throwing & Jumping) Terminologies Rules and regulations	Each students will be able to Draw Athletic track, Types of races Short distance Middle distance Long distance Jumps: Long jump, Triple jump High jump, Pole vault Throws: Shotput, Discus throw, Hammer throw and Javelin throw	Discussion on History of athletics, Type of races Types of jumps Types of throws Hurdle races Relay races Steeple chase Baton exchange etc.	

JULY	**<u>Physical Education & Sports for CWSN (Children With Special Needs- Divyang)</u>** Aims & objectives of Adaptive Physical Education Organization promoting Adaptive Sports (Special Olympics Bharat; Paralympics; Deaflympics) Concept of Inclusion, its need and Implementation Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & special Educator)	Each students will be able to Describe the aims & objectives of Adaptive Physical Education Understand the Organization promoting Adaptive Sports Students will know the concept of inclusion, its need and implementation Understand the role of various professionals for children with special needs	Discussion on Special Olympics Bharat; Paralympics; Deaflympics. Discussion on Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & special Educator Students to discuss the textual based questions	Questions will be discussed in the class MCQ's Questions for home assignment
	<u>Yoga</u> Meaning & Importance of Yoga Elements of Yoga Introduction - Asanas, Pranayam, Meditation & Yogic Kriyas Yoga for concentration & related Asanas (Sukhasana; Tadasana; Padmasana & Shashankasana, Naukasana, Vrikshasana (Tree pose), Garudasana (Eagle pose) Relaxation Techniques for improving concentration – Yog-nidra	Each students will be able to Know the meaning of yoga and understand the elements of yoga Understand the difference between Asanas, Pranayam, Meditation & Yogic Kriyas Describe yoga for concentration & related Asanas Know relaxation techniques for improving concentration	Discussion on Asanas, Pranayam, Meditation & Yogic Kriyas Discussion on Sukhasana; Tadasana; Padmasana & Shashankasana, Naukasana, Vrikshasana (Tree pose), Garudasana (Eagle pose) Students to discuss the textual based question	Questions will be discussed in the class MCQ's Questions for home assignment

AUGUST	**<u>Physical Activity & Leadership Training</u>** Leadership Qualities & Role of a Leader Creating leaders through Physical Education Meaning, objectives & types of Adventure Sports (Rock Climbing, Tracking, River Rafting, Mountaineering, Surfing and Para Gliding) Safety measures to prevent sports injuries	Each students will be able to Explain leadership qualities & role of a leader Describe the meaning, objectives & types of adventure sports Understand the safety measures to prevent sports injuries	Discussion on Creating leaders through Physical Education Discussion about Rock Climbing, Tracking, River Rafting, Mountaineering, Surfing and Para Gliding Students to discuss the textual based questions	Questions will be discussed in the class MCQ's Questions for home assignment
	<u>Test, Measurement & Evaluation</u> Define Test, Measurement & Evaluation Importance of Test, Measurement & Evaluation In Sports Calculation of BMI & Waist - Hip Ratio Somato Types (Endomorphy, Mesomorphy & Ectomorphy) Measurement of health related fitness	Each students will be able to Define Test, Measurement & Evaluation Understand calculation of BMI & Waist - Hip Ratio Differentiate between Somato Types Know measurement of health related fitness	Discussion on importance of Test, Measurement & Evaluation In Sports Discussion on Endomorphy, Mesomorphy & Ectomorphy Students to discuss the textual based questions	Questions will be discussed in the class MCQ's Questions for home assignment
SEPTEMBER	**<u>Fundamentals of Anatomy, Physiology & Kinesiology in Sports</u>** Definition and Importance of Anatomy, Physiology & Kinesiology	Each students will be able to Know the function of Skeleton System, Classification of Bones & Types of Joints Understand the Properties and Functions of Muscles	Discussion on importance of Anatomy, Physiology & Kinesiology Discussion on Dynamic & Static And Centre of Gravity and its application in sports Students to discuss the textual based questions	Questions will be discussed in the class MCQ's

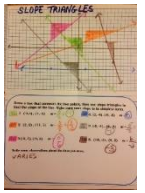
	Function of Skeleton System, Classification of Bones & Types of Joints Properties and Functions of Muscles Function & Structure of Respiratory System and Circulatory System Equilibrium – Dynamic & Static And Centre of Gravity and its application in sports	Know the Function & Structure of Respiratory System and Circulatory System Describe Equilibrium		Questions for home assignment
Mathematics				
April / May	10 **Topic : Sets**	**Each child will be able to** *define the term set. *represent a set in roaster and set-builder form. *list the various types of sets. *define equal sets. *define a subset. *define a power set. *define a universal set. *explain the various operations on sets i.e Union, intersection, compliment, difference *solve practical problems on union and intersection of sets *apply the concept of Venn diagrams for solving statement questions.	Questions from Assignment on Sets discussed. Students verified distributive law for three given non-empty sets NCERT and Assignment discussed in class through Google Meet	Oral Questioning Assignments Google forms based on Sets (15 Marker Test)
	19 Topic : Mathematical Induction	**Each child will be able to** *define deductive and inductive method *differentiate btw inductive and	Geometrical and Polar representation of Complex Number	Oral Questioning Assignments

	Topic: Complex Numbersand Quadratic Equations Topic: Conic Sections(Introduction)	deductive method *define a mathematical statement. *state the Principle of Mathematical Induction *prove mathematical statements using the Principle of Mathematical Induction **Each child will be able to** *recognize the need of a system of numbers beyond R *define iota. *define a complex number * find the sum, difference, quotient and product of two complex numbers *define conjugate and modulus of z *state the properties of modulus and conjugate of z *represent the complex number in polar form * understand various forms of conics	NCERT and Assignment discussed in class through Google Meet Art Integration: Using desmos graphing calculator making different shapes/monuments (application of conics)	Google Form
July	Teaching days 23 Relations and Functions (10)	Each child will be able to: *define the Cartesian product of sets *find the number of elements in a Cartesian product *define a relation *describe a relation in roaster, set-builder and arrow diagram form *find the domain and range of a relation *define a function and find the domain and range of a function	**Hook Activity**: Discussion on Applications of Relations and Functions Students will practice solved examples of NCERT at home which will help in further solving questions from Exercises Students will solve Exercises from chapter 2 (NCERT) Students will solve questions from Assignment Students will watch the relevant video at home: Khan academy video on the concept Relations and Functions	Through small tests in fundamentals Google form Oral Questioning Practice Paper Class work Homework

		*list the various types of function	https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/cc-8th-function-intro/v/relations-and-functions	
	Trigonometric Functions (11)	Each child will be able to: *define a periodic function. *find the trigonometric ratio over the domain R *state and apply trigonometric formulas for Cos(A ± B),Sin(A ± B) Tan(A ± B)	**Hook Activity**: Discussion on Applications of Trigonometric Functions Students will solve Exercises from chapter 3 (NCERT) Students will solve questions from Assignment Formulae sheet **Art Integration** Types of Functions: 	Through small tests in fundamentals Google form Oral Questioning Practice Paper Class work Homework Through Holiday Homework based on art Integration: Using Desmos software design a monument using various functions
	Lab activities (2)	1)To find the number of subsets of a given set and verify that if a set has n number of elements, then the total number of subsets is 2n 2)To verify that for two sets A and B, n (A×B) = p q and the total number of	**SE Activities** Lab Activities	Neatness and accuracy of paper work done

		relations from A to B is 2pq, where n(A) = p and n(B) = q		
August	Teaching Days 19 **Trigonometric** **Functions** (contd.) (5)	Each child will be able to: *State the C/D and product formulas *State the half angle formulas * solve trigonometric Equations *****General Solutions of trigonometric equations of the type siny=sina, cosy=cosa and tany= tana.	Students will practice solved examples of NCERT at home which will help in further solving questions from Exercises Students will solve Exercises from chapter 3 (NCERT) Students will solve questions from Assignment Discussion on the Video seen at home: https://www.youtube.com/watch?v=gp5efC2n0iM	Test on Formulas Through Class Test Oral questioning through Google hangout meet Class work Homework
	Limits and Derivatives (12)	Each child will be able to: *define limit of a function *perceive the geometrical interpretation of limits *evaluate the limit of various functions *define derivative of a function at a point *perceive the geometrical interpretation of derivatives *evaluate derivatives using the method of first principle. *learn the formulas of derivatives of some standard functions *perceive the concept of chain	Students will practice solved examples of NCERT at home which will help in further solving questions from Exercises Students will solve Exercises from chapter 13 (NCERT) Students will solve questions from Assignment **Experiential Activity**: Students will verify the geometrical significance of derivative	Through small tests in fundamentals Google form Oral Questioning Practice Paper Class work Homework

		rule, quotient rule and product rule *apply the knowledge gained in differentiating functions.		
September	Teaching Days 22 Linear Inequalities (5)	Each child will be able to: *define an Inequation *find algebraic as well as graphical solutions of linear inequations in one variable *find graphical solutions of linear inequations in two variables *Find the solutions of system of linear inequations in two variables	Students will practice solved examples of NCERT at home which will help in further solving questions from Exercises Students will solve Exercises from chapter 6 (NCERT) Students will solve questions from Assignment Students will watch the video: https://www.youtube.com/watch?v=z1-uYS6hsHQ **Experiential Activity:** 1) Students will verify that the graph of a given inequality, say $5x + 4y – 40 < 0$, of the form $ax + by + c < 0$, $a, b > 0$, $c < 0$ represents only one of the two half plane 2) Geogebra Software : Shading the area under the lines	Through Google Forms Oral Questions Classwork/ Homework Assignments Weekly test 11/09/2020
	Straight Lines(14)	Each child will be able to: *find the slope of a line *convert various forms of equation of a line: one-point form, two point form, slope-intercept	Students will practice solved examples of NCERT at home which will help in further solving questions from Exercises Students will solve Exercises from chapter 10 (NCERT)	Through small tests in fundamentals Google form Oral Questioning

		form, intercept form, normal form *find the equation of a line using the various forms of line *calculate the distance of a point from a line *perceive the concept of family of lines *define concurrency of lines *Interpret the given data to form the equation of line. *****perceive the concept of shifting of origin	Students will solve questions from Assignment **Art Integration**: Finding slope of a line  Students will watch the video: https://www.youtube.com/watch?v=qnMaWTmdbKk	Practice Paper Class work Homework
	Conic Section (Introduction) (3)	Each child will be able to: *state and explain various sections of a cone *write the equation of a circle with given radius and centre *find the centre and radius of a circle		Oral Questioning Class work Homework
***	The topics marked with asterisk in the syllabus have been deleted by CBSE for the academic year 2020-21. However, these topics will be covered through discussion in the class to bridge the learning gaps.			
Psychology				
April / May	Chapter 1: What is Psychology? • Psychology as a Discipline • Psychology as a Natural Science	Each student will be able to: • Explain the nature and role of psychology in understanding mind and behaviour • State the growth of Psychology • Describe the different schools of Psychology	• Discussion on what each students thinks about Psychology as a discipline. • Exploring how music acts as a therapy and how certain songs have proven to benefit patients medically. • Identification of overt and covert behaviours in everyday life.	• Assignments • Practice sheets • MCQ

	• Psychology as a Social Science • Understanding Mind and Behaviour • Popular Notions about the Discipline of Psychology • Evolution of Psychology • Development of Psychology in India • Branches of Psychology Chapter 1: What is Psychology? • Themes of Research and Applications • Psychology and Other Disciplines • Psychologists at Work • Psychology in Everyday Life Chapter 2: Methods of Enquiry in Psychology • Goals of Psychological Enquiry • Steps in Conducting Scientific Research • Alternative Paradigms of Research • Nature of Psychological Data • Some Important Methods in Psychology - Observational Method - Experimental Method	• Explain the various branches of Psychology Each student will be able to: • Explain the relationship of Psychology with other disciplines • Describe the different fields of psychology • State the various professions of psychologists • Explain the goals and nature of psychological enquiry • Describe some important methods of psychological enquiry • Identify independent and dependent variables • Create a hypothesis	• Creating hypothesis from research questions • Identifying different types of variables in a given hypothesis • Determining the most appropriate method of enquiry for different research problems.	• Assignments • Practice sheets • Google MCQ • Weekly assessment

	- Correlational Research - Survey Research - Psychological Testing - Case Study			
July	Chapter 3: The Bases of Human Behaviour • Evolutionary perspective on human behavior. • Biological and cultural roots; Nervous system and endocrine system. • Role of neurotransmitters in behavior. • Genetic bases of behavior. • Cultural and human behavior - Socialization, - - Enculturation, - - Globalization, Diversity and pluralism in the Indian context.	Each child will be able to: • Explain the evolutionary perspective on human behavior. • State the functions of endocrine glands • Explain the role of genetic factors in determining behaviour • Explain the role of neurotransmitters • Differentiate between sympathetic and parasympathetic nervous system • Describe the processes of enculturation, socialization and acculturation	• Brain hat would be made to show the four lobes of cerebrum • Role Play to show acculturation • Discussion on whether psychologist should study physiology or not	• Assignments • Practice Sheets • MCQ
August	Chapter 4: Human Development • Meaning of development • Life-span perspective on development • Bronfenbrenner's contextual view of development. • Overview of developmental stages -Prenatal development - Infancy - Childhood	Each child will be able to: • Describe the meaning and process of development • Explain the influence of heredity and environment on human development • Identify the stages of development Describe the major characteristics of infancy, childhood and adolescence	• Memory book will be made by citing own childhood experiences and pasting photographs and then categorizing them on the basis of Piaget's theory. • Discussion on euthanasia	• Assignments • Practice Sheet • MCQ

	- Adolescence			
September	Chapter 5: Sensory, Attentional and Perceptual Processes • Knowing the world • Nature of stimuli • ****Sense Modalities -Visual sensation -Auditory sensation • Attention : -selective attention -sustained attention • Perceptual Processes • The Perceiver • Principles of perceptual organisation. • Perception of space, depth and distance. • Perceptual constancies • Illusions • Socio-cultural influences on perception.	Each child will be able to: • Describe the nature of stimuli • Differentiate between selective and sustained attention • State the principles of perceptual organization. • Describe perceptual constancies • Differentiate between monocular and binocular cues • Explain illusions • Explain socio-cultural influences on perception.	• Painting will be made for monocular cues • Negative after images will be formed by students in class • Expectancy would be demonstrated by showing A, 13, C, D on the screen for 5 seconds and asking students to tell what they saw. • Retinal disparity will be shown through movement of a pencil	• Assignments • Practice Sheet • MCQ • Assessment Round II on 11/09/20
***	The topics marked with asterisk in the syllabus have been deleted by CBSE for the academic year 2020-21. However, these topics will be covered through discussion in the class to bridge the learning gaps.			