

MATHEMATICS CURRICULUM

CLASS: IX SESSION:

2023-2024

Sr. No.	Name of chapter	No. of Days/ Periods	Learning Outcomes	Methodology
1	Number Systems	12	The learner applies logical reasoning in classifying real numbers, proving their properties and using them in different situations.	The learners may be provided with opportunities individually or in groups and encouraged to work with real numbers and consolidate the concepts of numbers learnt in earlier classes. Some such opportunities could be: f to observe and discuss real numbers. f to recall and observe the processes involved in different mathematical concepts studied earlier and find situations in which they come across irrational numbers. For example, finding the length of the diagonal of a square with side, say, 2 units or area of a circle with a given radius, etc.
2	Polynomials	15	The learner identifies/classifies polynomials among algebraic expressions and factorises them by applying appropriate algebraic identities.	The learners may be provided with opportunities individually or in groups and encouraged to apply relevant results to factorise the polynomials.
3	Coordinate Geometry	10	The learner develops strategies to locate points in a Cartesian plane.	The learners may be provided with opportunities individually or in groups and encouraged to find and discuss ways to fix position of a point in a plane and different properties related to it.

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4	Linear Equations in Two Variables	15	The learner relates the algebraic and graphical representations of a linear equation in one or two variables and applies the concept to daily life situations.	The learners may be provided with opportunities individually or in groups and encouraged to draw and compare the graphs of linear equations in one or two variables.
5	Introduction To Euclid's Geometry	8	The learner identifies similarities and differences among different geometrical shapes.	The learners may be provided with opportunities individually or in groups and encouraged to discuss the proofs of mathematical statements using axioms and postulates. y play the following games related to geometry. f For Euclid's axioms, if one group says, if equals are added to equals, then the results are equal. The other group may be encouraged to provide example such as, if $a = b$, then $a + 3 = b + 3$.
6	Lines and Angles	15	The learner derives proofs of mathematical statements particularly related to geometrical concepts, like parallel lines, triangles, quadrilaterals, circles, etc., by applying axiomatic approach	The learners may be provided with opportunities individually or in groups and encouraged to work with algebraic identities using models and explore the use of algebraic identities in familiar contexts.

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7	Triangles	18	The learner finds areas of all types of triangles by using appropriate formulae and apply them in real life situations. y constructs different geometrical shapes like bisectors of line segments, angles and triangles under given conditions and provides reasons for the processes of such constructions.	The learners may be provided with opportunities individually or in groups and encouraged to discuss in groups about the properties of triangles and construction of geometrical shapes such as, triangles, line segment and its bisector, angle and its bisector under different conditions
8	Quadrilaterals	15	The learner will determine the similarities and differences between quadrilaterals by looking at their side, angle, and diagonal measures.	The learners may be provided with opportunities individually or in groups and encouraged to work with algebraic identities using models and explore the use of algebraic identities in familiar contexts.
9	Circles	12	The learners will be able to apply circle theorems to find missing angles and will be able to justify, with reason, the circle theorems they apply to find missing angles.	The learners may be provided with opportunities individually or in groups and encouraged to explore the features of solid objects from daily life situations to identify them as cubes, cuboids, cylinders, etc.

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10	Heron's Formula	10	The learner finds areas of all types of triangles by using appropriate formulae and apply them in real life situations.	The learners may be provided with opportunities individually or in groups and encouraged to calculating the area of a triangle in terms of the lengths of its sides that is credited to Heron of Alexandria (c. 62 CE). If the lengths of the sides are a , b , and c in symbols, then: $A = \sqrt{\{(s - a)(s - b)(s - c)\}}$, where s is half the perimeter, or $(a + b + c)/2$.
11	Surface Areas and Volumes	18	The learner derives formulae for surface areas and volumes of different solid objects like, cubes, cuboids, right circular cylinders/ cones, spheres and hemispheres and applies them to objects found in the surroundings.	The learners may be provided with opportunities individually or in groups and encouraged to explore the features of solid objects from daily life situations to identify them as cubes, cuboids, cylinders, etc.
12	Statistics	15	The learner analyses data by representing it in different forms like, tabular form (grouped or ungrouped), bar graph, histogram (with equal and varying width and length), and frequency polygon.	The learners may be provided with opportunities individually or in groups and encouraged to engage in a survey and discuss about different ways to represent data pictorially such as, bar graphs, histograms (with varying base lengths) and frequency polygons.

SCIENCE (086)
CLASS IX
ANNUAL CURRICULUM PLAN SESSION 2023-24

Sr. No.	Name of Chapter	No. of Periods	Learning objective	Methodology/Suggested Activity/ Toy Pedagogy
1.	Matter in our Surroundings	15 period with complete revision	Students will be able to- <ul style="list-style-type: none"> • Know the basic Concept about physical nature of matter. • Know that particles of matter are small in nature. • Learn about characteristics of particles of matter. • Distinguish the three states of matter on the basis of their properties. • Know that how matter can change its state • Understand the Effect of change of temperature and Pressure on states of matter. Understand the concept of Evaporation and how it causes cooling.	TOY PEDAGOGY - To study the structure of solid, liquid and gaseous molecules by showing thermocol balls arranged in sequence. Suggested Activites: <ul style="list-style-type: none"> • To show the process of sublimation by doing lab experiment. • To show that particles of matter are continuously moving by incense stick activity. • To make a chart showing characteristics of particles of matter in different states of matter.
2.	Is Matter around us Pure	10 periods	<ul style="list-style-type: none"> • Understand the exact formation of mixture and how it can be categorised. • Differentiate between mixtures and compounds. • Categorise the types of solutions (True solution, colloidal, 	TOY PEDAGOGY - <ul style="list-style-type: none"> • To study homogenous and heterogeneous mixtures by showing samples of different solutions and mixtures. Suggested Activites: <ul style="list-style-type: none"> • Tabulate the Different methods used for separating different types

			<p>suspension).</p> <ul style="list-style-type: none"> Understand the difference between physical and chemical changes. 	<p>of mixtures under the headings- Method used and Example of type of mixture.</p> <ul style="list-style-type: none"> Students will be divided in two groups- Group A: To make an activity of differentiation between saturated, unsaturated and super saturated solution. Group B: To make an activity showing differentiation between suspension, colloidal and true solution.
3.	Atoms and molecules	12 periods	<ul style="list-style-type: none"> Define Atoms and molecules. Understand the laws of chemical combination. Learn the formation of chemical formulas. Differentiate between atom, molecules and an ion. Calculate the atomic masses of various atoms in a given formula. <p>Understand the concept of mole in chemical nature.</p>	<p>TOY PEDAGOGY - To study the structure of polyatomic ions with help of balls.</p> <p>Suggested Activites:</p> <ul style="list-style-type: none"> Make flash cards of at least 5 elements between 1 to 20 atomic number and specify on each flash card its symbol, atomic mass and atomic number. Make a colourful chart of cations and anions with their name differentiated according to valency. (Four from each valency group)
4	Structure of an Atom	10 periods	<ul style="list-style-type: none"> Understand that what an atom consists of? Learn the dicoveries of particles of an atom. Learn the theories proposed for the discovery of an atom by - 1. J.J Thomson 2. Rutherford 3. Neil Bohr 	<p>TOY PEDAGOGY - To show watermelon as structure of an atom [J.J Thomson model of an atom].</p> <p>Suggested Activites:</p> <ul style="list-style-type: none"> Research on the work of James chadwick/J.J Thomson/Neil Bohr / Rutherford. Make a booklet on their biography and their discoveries. Draw a schematic atomic structure of first 20 elements

			Differentiate between Isotopes and Isobars on basis of their formation and uses.	
5.	The Fundamental Unit of cell	11 periods	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Know about cell and structural organization of cell. • Identify the process of Diffusion and osmosis with real life examples. • Analyze the concept of hypertonic solution . • Measure the consequences of swelling of different substances due to difference in concentration like swelling of gram or kidney beans in kitchen. • Understand the role and importance of different organelles present • Analyze the function of cell membrane and cell wall with reference to their importance in vital role of life • Explore their critical thinking by studying the permeability concepts. • Evaluate different types of tonicity depending on concentration of solute and solvent. • Justify the concept of osmosis and imbibitions with real life examples. 	<p>Lab experimenmts:</p> <ol style="list-style-type: none"> 1.To prepare stained temporary mounts of onion peel and to record observation and draw their labelled diagrams. 2. To prepare stained temporary mounts of cheek peel and to record observation and draw their labelled diagrams. <p>AIL Activities:</p> <ol style="list-style-type: none"> 1. Draw and label the colourful diagram of nucleus on the drawing sheet and write its characteristics. 2. To write important works done by Camillo Golgi in the field of Biology.Paste pictures of his achievements. 3. Toy Pedagogy: Making of cell organelles (mitochondria, plastids, endoplasmic reticulum, nucleus etc.) with the help of paper, sand\clay,stones,seeds,straws etc.
6	Tissues	11 periods	<ul style="list-style-type: none"> • To make them learn and understand about tissues 	<p>Lab experimenmts:</p> <ol style="list-style-type: none"> 1. To observe permanent slides of different permanent tissues like

			<p>and structural organization of different tissues .</p> <ul style="list-style-type: none"> • To enhance the ability to analyses the role and importance of different tissues present in plants and animals. • To make them share their opinion on simple and complex tissues. • To evaluates different function of tissues depending on their location and structure. 	<p>parenchyma, collenchyma, sclerenchyma, Xylem and phloem. They will draw and their labelled diagrams.</p> <p>2. To identify striped, unstriped, cardiac, nerve tissue from prepared slides and draw their labelled diagrams.</p> <p>AIL Activities:</p> <p>1. To collect root, stem, leaves, and seeds of monocot and dicot plants .See the contrast and write their characteristics. Paste the specimens in the Scrap book also.</p> <p>2. Draw a mind map of plant tissues and animal tissues with their types showing difference in them using different colours on A4 sheet.</p> <p>3. Use fluorescent sheets/ crayons/ watercolour / to make diagrams of striated, unstriated and Cardiac muscles on a drawing sheet.</p> <p>4. To present a paper - xylem as a compound tissue and functions of its different components.</p> <p>5. Toy Pedagogy: Colour parts of types of meristematic tissues on the stem of plant and labelling them with the help of paper strips.</p>
7.	Motion	12 periods	<p>Students will be able</p> <ul style="list-style-type: none"> • To understand the concept of motion and its types • To differentiate between scalar and vector quantities • To understand the relationship between displacement, velocity, and acceleration • To understand the concept of uniform and non-uniform motion • To apply the concept of motion to real-life situations 	<ol style="list-style-type: none"> 1. Use toy cars and ramps to demonstrate the concept of motion and its types. 2. Use toy arrows with different lengths to differentiate between scalar and vector quantities. 3. Use a toy train and a stopwatch to measure the time and distance traveled, and calculate the velocity and acceleration. 4. Use a toy car and a stopwatch to demonstrate the concept of uniform and non-uniform motion. 5. Use real-life examples, such as a moving bicycle or a flying bird, to apply the concept of motion
8	Force and Laws of Motion	12 periods	<p>Students will be able</p> <ul style="list-style-type: none"> • To understand the concept of force and its 	<ol style="list-style-type: none"> 1. Use toy magnets and toy cars to demonstrate the different types of force.

			<p>different types</p> <ul style="list-style-type: none"> • To explain Newton's laws of motion and their applications • To understand the concept of inertia, momentum, and friction • To apply the laws of motion to real-life situations • To understand the relationship between force, mass, and acceleration 	<ol style="list-style-type: none"> 2. Use a toy car and a stopper to demonstrate the first law of motion. 3. Use a toy car and a balloon to demonstrate the second law of motion. 4. Use a toy car and a rough surface to demonstrate the concept of friction. 5. Use real-life examples, such as a moving car or a ball thrown in the air, to apply the laws of motion
9	Gravitation	12 periods	<p>Students will be able</p> <ul style="list-style-type: none"> • To understand the concept of gravitation and its laws • To explain the concept of acceleration due to gravity • To understand the difference between mass and weight • To apply the concept of gravitation to real-life situations • To understand the relationship between distance, mass, and gravitational force 	<ol style="list-style-type: none"> 1. Use a toy ball and a hoop to demonstrate the concept of gravitational force. 2. Use a toy car and a ramp to demonstrate the concept of acceleration due to gravity. 3. Use toy weights and a balance to differentiate between mass and weight. 4. Use real-life examples, such as a falling apple or a satellite orbiting the Earth, to apply the concept of gravitation.
10	Work and Energy	10 periods	<p>Students will be able</p> <ul style="list-style-type: none"> • To understand the concept of work and its relation to force and displacement • To explain the concept of energy and its different forms • To understand the law of conservation of energy • To apply the concept of work and energy to real-life situations 	<ol style="list-style-type: none"> 1. Use a toy car and a ramp to demonstrate the concept of work and its relation to force and displacement. 2. Use a toy car and a spring to demonstrate the concept of potential and kinetic energy. 3. Use a toy pendulum and a stopwatch to demonstrate the law of conservation of energy. 4. Use real-life examples, such as a moving car or a falling object, to apply the concept of work and energy. 5. Use a toy windmill and a fan to

			<ul style="list-style-type: none"> To understand the relationship between work, energy, and power 	demonstrate the relationship between work, energy, and power.
11	Sound	12 periods	<p>Students will be able</p> <ul style="list-style-type: none"> To understand the nature of sound and its properties To explain the concept of sound waves and their characteristics To understand the difference between loudness and pitch To apply the concept of sound to real-life situations To demonstrate the concepts of reflection, refraction, and resonance in sound waves 	<ol style="list-style-type: none"> Use a toy guitar and a tuning fork to demonstrate the nature of sound and its properties. Use a toy slinky to demonstrate the concept of sound waves and their characteristics. Use a toy whistle and a sound level meter to differentiate between loudness and pitch. Use real-life examples, such as a musical concert or a thunderstorm, to apply the concept of sound.
12.	Improvement in food resources	10 periods	<p>Students will be able to:</p> <ul style="list-style-type: none"> Learner learnt and understood about importance of animal husbandry. Identify that livestock farming is done for dairy and drought and marine culture not only provides seafood but also for pearl cultivation along with the difference between broilers (consuming) and layers (for eggs production). share their opinion on improvement of animal variety through breeding They were able to evaluate different types 	<p>AIL Activities:</p> <ol style="list-style-type: none"> Group discussion on various agricultural revolutions (green, white , yellow and Golden) in India and their significance. To make a project report on weed management techniques and their role in keeping the land weed free. To make a PowerPoint Presentation on work and achievements of father of Green Revolution M.S. Swaminathan To visit nearby poultry farm and make observations regarding the types of breeds present there. Observe and make note of the facilities given to breeds such as shelter, feed, lightning facilities and other management practices. Toy Pedagogy: To show different patterns of crops using tray, soil and saplings.

			<p>of farming practices like – poultry, fish, bee-keeping of different states or places.</p> <ul style="list-style-type: none"> • They were able to explore their critical thinking on the main aim of improvement of food resources and were able to justify different revolutions done by government for improvement of food resources. • They were able to apply their knowledge to relate quality of honey depends on pasturage (availability of flower for nectar collection). • They were able to evaluate different types of • know different types of crops like zayed, kharif and rabi and understand about micro and macro nutrients and about manures and fertilizers Analyze different cropping patterns like Mixed, crop rotation, inter, organic farming. Share their opinion on improvement of crop variety. • Explore their critical thinking by studying the importance of plant breeding. 	
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CBSE
SOCIAL SCIENCE
CURRICULUM
2023-24
(CODE NO. 087)
CLASS-IX

S.no.	Topic	No. of periods	Learning Outcomes	Methodology
1	History (India & Contemporary World-10 The French Revolution	17	<p>Compare and contrast the conditions prevailed in France that led to revolution with the conditions that led to the First war of Indian Independence (1857). Critically Examine the situations that made the raise in demand of Voting Rights by passive citizens as well as women. Appraise the impact of the French revolution on the world.</p>	<p>Classroom discussions to compare & contrast the conditions prevailed in France that led to revolution with the conditions that led to the First war of Indian Independence (1857). Enquiry based learning to appraise the impact of the French revolution on the world.</p>
2	Socialism in Europe & The Russian Revolution	17	<p>To compare & contrast the situations that led to the rise of Russian & French Revolutions. Evaluate the situations that enabled Lenin's Communism. Interpret the different ideas of philosophers & leaders that shaped</p>	<p>Textual interpretation to compare & contrast the situations that led to rise of Russian & French Revolutions. World Café strategy to evaluate the situations that enabled Lenin's Communism. Socratic Discussions to interpret the ideas of philosophers & leaders that shaped the revolution.</p>

3	Nazism and the Rise of Hitler	17	<p>Citing the events that helped Hitler's rise to power.</p> <p>Evaluate various character traits of Hitler.</p> <p>Analyse the role of 'Treaty of Versailles' in the rise of Nazism & Hitler.</p>	<p>Watch Video Clipping from the last days of Adolf Hitler & discuss the reasons for rise & fall of Hitler.</p> <p>Dramatize the Nazi Propaganda/racial discrimination against Jews .</p> <p>Cartoon interpretation /image interpretation.</p>
4	Forest Society & Colonialism	8	<p>Students will be able to discuss the impact of colonialism on forest societies, & explore the concept of forest as resource in colonialism.</p>	<p>Inter Disciplinary project</p> <p>Chapter 5 of Geography "Natural Vegetation & Wildlife"</p>
5	Pastoralists in the Modern World	10	<p>Compare & contrast the lives of Pastoralists pre & post colonialism.</p> <p>Analyse the situations that have created Nomadic Society.</p> <p>Compare & contrast the lives & the reasons for poverty of pastoral nomads of India with African Pastoral Nomadic tribes.</p> <p>Analyse patterns of developments within pastoral societies in different places in India.</p> <p>Analyse the impact of colonialism on forest societies leading to scientific forestry.</p>	<p>Compare & contrast the lives of Pastoralists pre & post colonialism.</p> <p>An integration to depict the evolution of Nomadic Society.</p> <p>Research based presentations using resources provided to compare the lives and the reasons for poverty of pastoral nomads of India with African Pastoral Nomadic tribes.</p>

1.	Political Science (Democratic Politics-1) What is democracy? Why democracy?	4	Interpret the statement “Democracy provides a method to deal with differences & conflicts with reference to India. Summarize the features and benefits of democracy	Cartoon interpretation to summarize the benefits of democracy.
2.	Constitutional Design	4	Analyse the difference between written & unwritten constitutions with reference to India & USA Describe the situation that led to creation of Indian Constitution. Compare & contrast between Preamble of South African Constitution with the Preamble of Indian Constitution. Enumerate the roles and responsibilities as citizens of India	Group Discussion to comprehend the purpose of constitution. Role play strategy for creation of Indian constitution. Declamation strategy for roles and responsibilities of citizens.
3	Electoral Politics	4	Evaluate the role of political parties to adhere to electoral promises. Create a solution for eradication of malpractices in elections. Summarize the essential features of the Indian Electoral System. Examine the rationale for adopting the present Indian Electoral System	Role play, class council elections. Design & present election manifesto. Create multiple parties & create symbols for elections. Play to create awareness about the right to vote.
4	Working of Institutions	4	Analyse & infer how the three organs are interdependent & independent to execute their roles. Summarize & evaluate the rule of law in India. Represent the role of Parliament & its procedures. Distinguish between political & permanent executive authorities & functions. Understand the Parliamentary system of executive’s accountability to the legislature.	Watch Videos of Parliament & discuss the importance of question hour. Examine the relevant case studies to evaluate the rule of law. Present Mock Parliament session to convert

5	Democratic Rights	4	<p>Understand the working of Indian Judiciary.</p> <p>Analyse the need of having rights & categorize the rights. Evaluate the statement “Democracy is meaningless without rights” Analyse role as a responsible citizens. Summarize the flipped coexistence of rights versus duties. Apply the process available to citizens for safeguarding rights.</p>	<p>a bill into law. Role play on features of the political & permanent executive.</p> <p>Declamation on need to have rights & the importance of performing duties. Debate the need to have rights in the light of study of Saudi Arabia. Case study to analyse the role of citizens when the rights are exercised or otherwise. Graphic organizer to summarize the coexistence of rights vs duties.</p>
1	Geography (Contemporary India) India-Size & Location	12	<p>Justify the reasons for the differences in climatic conditions, local & standard time. To infer how the conditions & relationships of the people living in states that are sharing border with the neighbouring countries impact trade & culture. Justify the selection of 82.5°E Time Meridian of India(IST).</p>	<p>Used Globe to represent & justify the reasons for the differences in climatic conditions, local & standard time. On political map of India locate 7 label neighbouring countries, states & capitals & UTS of India.</p>
2	Physical features of India	12	<p>Conclude why India is a sub continent based on study of different physical features. Analyse the conditions & relationships of the people living in different physiographic areas. Enumerate the different</p>	<p>Role play to depict the lives & relationships amongst physiographic areas. Collaborate</p>

3	Drainage	15	<p>environmental issues in India & propose solutions for their issues.</p> <p>Enlist the different rivers, the areas they serve & their impact on the economy of that area. Enumerate the different lakes & describe their contribution to the Indian ecology. Present creative solutions to overcome the water pollution also to increase the contribution of water bodies to Indian economy. Identify the river systems of the country & explain the role of rivers in human society.</p>	<p>brainstorming & presentation using different modes such as books, journals, collage & other suitable presentations.</p> <p>Choice Board Strategy where each group to take up one river & focus on the areas they serve & the impact on Economy of that area. Students will prepare a PPT on lakes. Poster making to present awareness on water pollution & suggest solutions.</p>
4.	Climate	15	<p>Infer how the factors determine the climate of India. Analyse & infer the effect of monsoon winds on rainfall of the Indian subcontinent. Analyse the temperatures between plateau region, Himalayan region, Desert region & Coastal region.</p> <p>Enumerate & summarize the reasons for the wide difference between temperatures at different geographical locations of India. Propose protocols as preventive action for various disasters. Present mock drills on protocols as preventive action for various disasters</p>	<p>Collect & Read the weather reports & have a classroom discussion to conclude about the factors controlling climate. Watch Videos & summarize the findings. Mind map/graphic organizers to enumerate & summarize the reasons for the wide difference between the day & night temperatures at different geographical locations of India.</p>

5	Natural Vegetation and Wildlife	10	Students will be able to discuss the social & cultural world of forest community through the study of specific revolts.	Inter Disciplinary Project with History chapter number 4 "Forest Society and Colonialism"
6	Population	11	Analyse & infer the reasons behind the uneven distribution of population in India with specification to UP & Rajasthan & Mizoram & Karnataka. Enlist the factors that affect the population density.	Research based learning & art integration strategy to analyse & infer the reasons behind the uneven distribution of population in India with specification to UP & Rajasthan & Mizoram & Karnataka.
1	Economics The Story of Village Palampur	5	Analyse and infer how the prevailing farming conditions impact economic development of different states. Enlist the requirements of production & summarize the interdependence of these requirements. Enlist non farming activities & depict the link with economic growth	Interview farmers & present it in the class(Experiential Learning Strategy) Poster making & concept map to enlist the requirements of production & summarize the interdependence of these requirements.
2	People as a Resource	5	Analyse & infer the reasons that contribute to the quality of population. Enumerate the different schemes of Government in some states & infer on the quality of people there by. Propose solutions to resolve unemployment problem.	Case study on quality of population(Classroom Discussion) Collect sources from Newspaper/Media & present the findings in the form of a collage. Neighbourhood survey on

3	Poverty as a Challenge	5	<p>Analyse & infer the reasons of poverty in the rural & urban areas. Evaluate the efficacy of government to eradicate poverty. Compare how poverty estimates have transformed from 1993-94 to 2011-12. Examine the link between education & poverty.</p>	<p>employment , analyse the quality of neighbourhood population.</p> <p>PPT presentation using case study given in NCERT text on the reasons of rural & urban poverty. Declamation with data to evaluate the efficacy of government to eradicate poverty. Debate whether education can remove poverty.</p>
4	Food Security	5	<p>Enumerate various aspects of food security that will ensure continuity of supply to the masses. Examine, analyse & infer various sources of data that point to the rationale of FSI. Enumerate different features of PDS that directly address FSI. Analyse & infer the impact of Green revolution in strengthening the PDS.</p>	<p>Case study & group discussion to substantiate the link between a well structured food security system & continuity of supply to masses. Discussion on the impact of the Green revolution & PDS.</p>

S.No	Subject	Name of the Chapter	List of Areas to be Map Pointed	Methodology
1	History	French Revolution	Outline political map of France Locate/Label the following: Bordeaux, Nantes, Paris, Marseille	French Political Map will be shown to the students so that they can label and
		Socialism in Europe	Outline political map of World Locate/Label the following: Central Powers-Germany, Austria-Hungary, Turkey(Ottoman Empire) Allied Powers- France, England, Russia, USA	locate the places World Political map will be shown to the students so that they can label & locate the
2	Geography	India: Size & Location	India: States with Capitals Tropic of Cancer, Standard Meridian (Location & Label) Neighbouring Countries	Central powers and Allied powers. India political map will be shown to the students after that they will be
		India Physical Features	Mountain Ranges: The Karakoram, The Zasker, The Shivalik, The Aravalli, The Vindhya, The Satpura, Western & Eastern Ghats Mountian peaks: K2, Kanchanjunga, Anaimudi Plateau: Deccan plateau, Chota Nagpur plateau, Malwa plateau Coastal Plains: Konkan, Malabar, Coromandel & Northern Circar (Location & Label)	told to label & locate the states & capitals. On the smart class map of India will be shown to the students so that they can understand the physical features of India. After that students will be
		Drainage	Rivers: Identification only The Himalayan River System: The Indus, The Ganges & The Satluj The Peninsular Rivers: The Narmada, The Tapi, The Kaveri, The Krishna, The Godavari, The Mahanadi Lakes: Wular, Pulicat, Sambhar, Chilika	told to label & locate the physical features of India.
		Climate	Percentage of rainfall in India, Monsoon wind directions	India political map will be shown to the students, later on they will ask to label & locate the highest & lowest
		Population	Population density of all state The state having highest and lowest density of population	density of population on map.

CURRICULUM PLANNER FOR 2023-24
CLASS IX
SUBJECT (AI-Artificial Intelligence)

S.No	Name of Chapter	No of Days/ Periods	Learning Outcomes	Methodology
1.	<p style="text-align: center;">Self-Management Skills-I</p> <ul style="list-style-type: none"> ➤ Importance of Self Management ➤ Building self Confidence 	6Days/6 Periods	<ul style="list-style-type: none"> ➤ Understand and learn about Self management skills ➤ Self Mgt keys ➤ Initiative ➤ Organization ➤ Accountability ➤ Time Management ➤ Adopting problem solving attitude ➤ Positive result of self management ➤ SWOT Analysis ➤ Building Self confidence 	<ul style="list-style-type: none"> ➤ Quiz: Related to the topic ➤ Lab Activity:GCompris Family game ➤ Art Integration: Students to create timeline on early calculating machines and evolution of computer
2.	<p style="text-align: center;">ICT Skills-I</p> <ul style="list-style-type: none"> ➤ Intro to ICT ➤ Components of computer system ➤ Peripheral Devices ➤ Basic Computer system ➤ Operating system ➤ Intro to Internet ➤ Intro to email ➤ Intro to Social Media 	16Days/16 Periods	<ul style="list-style-type: none"> ➤ Role and Importance of ICT ➤ ICT Tools ➤ Basic organization of Computer System ➤ Language Processors ➤ Different Input output Devices and Memory ➤ Operating System ➤ Mobile Operation System ➤ Features of Windows ➤ Understand the importance of organizing ➤ Define and differentiate between file ,folder and sub folder ➤ Identify the various types of files ➤ List the role of File Explorer in managing files and folders ➤ Change the view of files and folders ➤ Learn about Selecting Files and Folders ➤ Creating, Renaming, Copying, Moving and Deleting Files/Folders 	<ul style="list-style-type: none"> ➤ Quiz: Related to Topic ➤ Lab Activity-Students to create a folder of their name and sub folders of different subjects, then organize file accordingly ➤ Subject Integration: Students to create files for at least any 2 subjects and work on the same

CURRICULUM PLANNER FOR 2023-24
CLASS IX
SUBJECT (AI-Artificial Intelligence)

S.No	Name of Chapter	No of Days/ Periods	Learning Outcomes	Methodology
3.	Entrepreneurial Skills-I <ul style="list-style-type: none"> ➤ Types of business activities ➤ Characteristics of Entrepreneurship 	6Days/6 Periods	<ul style="list-style-type: none"> ➤ Entrepreneurial skills ➤ Some Entrepreneurial in Local Communities ➤ Types of business ➤ Types of Business Organisation ➤ Entrepreneurial Development ➤ Factors affecting Entrepreneurship Growth ➤ Characteristics of Entrepreneurs ➤ Role of Entrepreneurial 	<ul style="list-style-type: none"> ➤ Quiz: Oral Test on Shortcut keys related to the topic ➤ Subject Integration (English) Project on Creating Letter regarding Annual Function award declaration ➤ Lab Activity: (MS Word) Create a table for their own family records
4.	Introduction to Artificial Intelligence (AI)	15Days/ 15 Periods	<ul style="list-style-type: none"> ➤ To identify and appreciate Artificial Intelligence and describe its applications in daily life. ➤ To relate, apply and reflect on the Human-Machine Interactions. ➤ To identify and interact with the three domains of AI: Data, Computer Vision and Natural Language Processing. ➤ To undergo an assessment for analysing progress towards acquired AI-Readiness skills. ➤ Learners to relate to application of Artificial Intelligence in their daily lives. ➤ To unleash their imagination towards smart homes and build an interactive story around it. ➤ To understand the impact of Artificial Intelligence on Sustainable Development Goals to develop responsible citizenship. ➤ To research and develop awareness of skills required for jobs of the future. 	<ul style="list-style-type: none"> ➤ Quiz-Related to topic Lab Activity ➤ Ice Breaker Activity: Dream Smart Home idea ➤ Learners to design a rough layout of floor plan of their dream smart home. ➤ Learners to participate in three games based on different AI domains. ➤ Game 1: Rock, Paper and Scissors (based on data) ➤ Game 2: Mystery Animal (based on Natural Language Processing - NLP) ➤ Game 3: Emoji Scavenger Hunt (based on Computer Vision - CV) Writing a Letter to one's future self ➤ Learners to write a letter to self-keeping the future in context. They will describe what they have learnt so far or what they would like to learn someday Video Session: To watch a video ➤ Introducing the concept of Smart Cities, Smart

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			<ul style="list-style-type: none"> ➤ To imagine, examine and reflect on the skills required for the futuristic opportunities. ➤ To develop effective communication and collaborative work skills. ➤ To understand and reflect on the ethical issues around AI. ➤ To gain awareness around AI bias and AI access. ➤ To let the students analyse the advantages and disadvantages of Artificial Intelligence. 	<p>Schools and Smart Homes</p> <p>Video Session: Discussing about AI Ethics Recommended Activity: Ethics Awareness</p> <ul style="list-style-type: none"> ➤ Students play the role of major stakeholders, and they have to decide what is ethical and what is not for a given scenario. <p>Recommended Activity: Balloon Debate</p> <ul style="list-style-type: none"> ➤ Students divide in teams of 3 and 2 teams are given same theme. One team goes in affirmation to AI for their section while the other one goes against it.
5.	AI Project Cycle	12 Days/ 12 Periods	<ul style="list-style-type: none"> Identify the AI Project Cycle framework. Learn problem scoping and ways to set goals for an AI project. ➤ Identify stakeholders involved in the problem scoped. Brainstorm on the ethical issues involved around the problem selected. ➤ Understand the iterative nature of problem scoping for in the AI project cycle. Foresee the kind of data required and the kind of analysis to be done. ➤ Identify data requirements and find reliable sources to obtain relevant data. ➤ To understand the purpose of Data Visualisation 	<ul style="list-style-type: none"> ➤ Quiz-related to topic ➤ Toy Pedagogy ➤ List down/ Draw a mind map of problems related to the selected topic and choose one problem to be the goal for the project. Lab Activity: To set actions around the goal. ➤ List down the stakeholders involved in the problem. ➤ Search on the current actions taken to solve this problem. Think around the ethics involved in the goal of your project. ➤ Lab Activity Presentation: Presenting the goal, actions and data. <p>Activity: Let's use Graphical</p>

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			<ul style="list-style-type: none"> ➤ Use various types of graphs to visualise acquired data. ➤ Understand, create and implement the concept of Decision Trees. ➤ Understand and visualise computer's ability to identify alphabets and handwritings. 	<p>Tools</p> <ul style="list-style-type: none"> ➤ To decide what kind of data is required for agiven scenario and acquire the same. ➤ To select an appropriate graphical format to represent the data acquired. <p>Presenting the graph sketched. : Decision Tree</p> <ul style="list-style-type: none"> ➤ To design a Decision Tree based on thedata given.
6.	Neural Network	12Days/ 12 Periods	<ul style="list-style-type: none"> ➤ Understand and appreciate theconcept of Neural Network through gamification. ➤ Supervised Learning ➤ Relationship between Networks and Human Nervous System ➤ Reinforcement Learning 	<ul style="list-style-type: none"> ➤ Quiz-Related to topic ➤ Art Integration/Toy Pedagogy ➤ Lab Activity <p>Creating a Human Neural Network</p> <ul style="list-style-type: none"> ➤ Students split in four teams each representing input layer (Xstudents), hidden layer 1 (Y students), hidden layer 2 (Z students) and output layer (1 student) respectively. ➤ Input layer gets data which is passed on to hidden layersafter some processing. The output

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				layer finally gets all information and gives meaningful information as output.

7	Introduction to Python	25 Days/25 Periods	<ul style="list-style-type: none"> ➤ Learn basic programming skills through gamified platforms. ➤ Acquire introductory Python programming skills in a very user-friendly format. 	<ul style="list-style-type: none"> ➤ Quiz-Related to the topic ➤ Toy Pedagogy-Computer ➤ Lab Activity <p>Activity:</p> <ul style="list-style-type: none"> ➤ Introduction to programming using Online Gaming portals like Code Combat. <p>Theory + Practical: Python Basics</p> <ul style="list-style-type: none"> • Python Basics (Variables, Arithmetic Operators, Expressions, Data Types - integer, float, strings, using print() and input() functions) ➤ Students will try some simple problem-solving exercises on Python Compiler. <p>Flow of control and conditions</p> <ul style="list-style-type: none"> ➤ Conditional and iterative statements (if, for and while) ➤ Students will try some basic problem-solving exercises using conditional and iterative statements on Python Compiler <p>Python Lists</p> <ul style="list-style-type: none"> • Lists (Simple operations using list) • Students will try some basic problem-solving exercises