HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF COMPUTER SCIENCE

CLASS IV [COMPUTER + A.I.]

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
APRIL	Evolution of Computing Devices	Learn about the evolution of computers, and Calculating Devices	Constructive Approach	White Board board, Computer Lab, Book	1 Classroom discussion	Create one chart to show the Calculating Devices	Create a PowerPoint Presentation on. Calculating Devices
JULY	About Files and Folders	Learning about the use of files and folders and remove folders	Inquiry based approach	White Board board, Computer, learning Videos, Book	1 Classroom discussion		Create a file and folders how to open file and folders
AUGUST	Diving Into Paint 3D	Learning about creating drawings using 3 D options.	Inquiry based approach	White Board board, Computer, learning Videos, Book	1 Classroom discussion		Create a drawing
	PRE MID TERM EXAM						
SEPTEMBER	Learning MS Word 2016	Learn about apply bullets and numbering, insert symbols in a Word document.	Inquiry based approach	White Board board, Computer, learning Videos, Book	1 Classroom discussion		Create a type one paragraph how to use bullets and numbering.
OCTOBER	**MID TERM EXAM**						
	Learning Tables Objects	Learning about use different objects such as. word Art, picture and shapes	Constructive Approach	White Board board, Computer, Book	1 Classroom discussion		Complete the tables in MS Word 2016
NOVEMBER	More About Scratch	Learning about how to create scratch programs.	Constructive Approach	Green board, Computer Book	1 Classroom discussion, Computer Practical		Create scratch program (min. 5)

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DECEMBER	**POST MID TERM EXAM**						
	Learning MS Power point 2016	Learning about the basic of MS power Point.	Constructive Approach	White Board board, Computer, learning Video, Book	2 Real life situations		Create a power point presentation on your Toye's.
JANURARY 25	Learning Slides	Learning about the new features of MS power Point.	Constructive Approach	White Board board, Computer, learning Video, Book	2 Real life situations		Apply animation on your slides.
	Learning about internet.	Learning about how to use internet	Constructive Approach	White Board board, Computer, learning Video, Book	Real life situations		Search some topics on internet and create one PPT file.
FEB. 25	**Revision**						
	FINAL PRACTICAL EXAMINATION						
MARCH 25	**ANNUAL EXAMINATION**						

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[NAVEEN SHARMA]

SIGNATURE OF PRINCIPAL_____
[ANJU SHARMA]

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF COMPUTER SCIENCE

CLASS V [COMPUTER + A.I.]

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
APRIL	How computer evolved	Learn about the evolution of computer in various generation, computer memory and its type	Constructive Approach	White Board board, Computer Lab, Book	Classroom discussion	Create one chart to show the evolution of computer generation	Create a PowerPoint Presentation on generation of computer and memory and its types.
JULY	Learning window 10	Learning about the different features of window 10	integrative approach	White Board board, Computer, learning Videos, Book	1 Classroom discussion	Draw the task bar of window 10	Explaining the features of window 10
AUGUST	Advanced feature of MSWord	Learn to add symbols and shapes in MS word 2016	constructive approach	White Board board, Computer, Book	1 Classroom discussion	Draw the table in word	
	PRE MID TERM EXAM						
SEPTEMBER	Mail Merge	Learn about the mail merge feature, create the main document and the data sources of mail merge	Inquiry based approach	White Board board, Computer, Book	1 Activities (Sent a testing Mail to your teacher)	Create a birthday party invitation letter to be sent to your friends.	Explaining how to merge data source and the main document
OCTOBER	**MID TERM EXAM**						
	Improving Presentations	Learning about the different objects such as word art, picture and shapes.	Constructive Approach	White Board board, Computer, Book	1 Classroom discussion	Draw the shapes.	Create a PPT on the topic '**our continent'** using Ms-power point.
	Learning scratch	Student will understand about scratch Programming.	Constructive Approach	Computer, Book	1 Activities (create scratch program)	apply different blocks of the control in a scratch	Explaining sensing block and its execution.

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DEPARTMENT OF COMPUTER SCIENCE

NOVEMBER	Learning MS-excel 2016	Learning about how to create spread sheet software.	Constructive Approach	Computer Book	1 Classroom discussion, Computer Practical	Create a spread sheet.	Create a new work sheet and entering data in a worksheet.
DECEMBER	**POST MID TERM EXAM**						
	World wide web	Learning about the history and development of the internet.	Inquiry Approach	Computer, Book	Classroom discussion		Explaining how to accessing the internet.
JANURARY 25	Learning flow chart and algorithm	Learning about the flow chart and algorithm.	Constructive approach	White board, Books	Classroom discussion	Draw a flow chart.	Explaining problem solving method.
FEB. 25	**REVISION**						
	FINAL PRACTICAL						
MARCH 25	**ANNUAL EXAMINATION**						

SIGNATURE OF HOD _____
[Naveen Sharma]

SIGNATURE OF PRINCIPAL_____
[Anju Sharma]

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF COMPUTER SCIENCE

CLASS VI [COMPUTER + A.I.]

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
APRIL	Programming Language	Learn about the computer Languages like Machine language, Assembly and High-level languages	Constructive Approach	White Board board, Computer Lab, Book	1 Classroom discussion 2 Problem based learning 2 Project	Create one chart to show the relationship between different languages	Create a PowerPoint Presentation on 'Programming Languages and their benefits'.
JULY	Advance Features of Power point	Learning about the Power point presentation	Inquiry based approach	White Board board, Computer, learning Videos, Book	1 Classroom discussion		Create a photo album using the pictures of your family members. Also include some Music on the slides to be played at the background, using MS PowerPoint 2016.
AUGUST	Editing In MS Excel	Learning about the MS Excel	Inquiry based approach	White Board board, Computer, learning Videos, Book	1 Activities (Make Excel file)		Create a grocery list in Excel for 10 items
	PRE MID TERM EXAM						
SEPTEMBER	MS Excel Formulas and Functions	Learn about MS Excel Formulas and functions	Inquiry based approach	White Board board, Computer, learning Videos, Book	1 Classroom discussion		Create a grocery list in Excel for 10 items and apply formulas to calculate the rate and Total Amount.

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF COMPUTER SCIENCE

OCTOBER	**MID TERM EXAM**						
	Computational Thinking	Learning about Computational Thinking Importance of Computational Thinking	Constructive Approach	White Board board, Computer, Book	1 Classroom discussion		Complete the Critical Thinking Section given on page no. 64 and 65 of your computers Text book.
	Python Programming	Student will understand about python programming Language.	Constructive Approach	White Board board, Computer, Book	1 Activities (prepare Python Program)	Write advantages of python in chart.	Create 5 Python basic programs.
NOVEMBER	About HTML	Learning about how to create web pages in HTML.	Constructive Approach	Green board, Computer Book	1 Classroom discussion, Computer Practical		Create web pages in HTML language.
DECEMBER	**POST MID TERM EXAM**						
	About AI	Learning about the basic of Artificial Intelligence.	Constructive Approach	White Board board, Computer, learning Video, Book	2 Real life situations	Create one chart to show the features of AI	
JANURARY 25	**REVISION**						
FEB. 25	**FINAL PRACTICAL EXAMINATION**						
MARCH 25	**ANNUAL EXAMINATION**						

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[Naveen Sharma]

SIGNATURE OF PRINCIPAL_____
[Anju Sharma]

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF COMPUTER SCIENCE

CLASS- VII [COMPUTER+A.I.]

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
APRIL	Learning Excel	Learning about the new features of MS Excel.	Constructive Approach	White board, Computer, learning Videos	1 Classroom discussion 2 Problem based learning		Create a list of 20 students and their marks in any 5 subjects in excel software and calculate percentage.
JULY	Learning Python	Student will understand about python programming Language.	Constructive Approach	White Board board, Computer, Book	1 Activities (Create python program)	Write advantages of python in chart.	Create 5 Python basic programs.
AUGUST	Learning Conditional Statements	Students will understand about Loops in Python Language.	Constructive Approach	Green board, Computer, learning	1 Classroom discussion 2 Problem based learning		Create 5 Python looping based programs.
	PRE MID TERM EXAM						
SEPTEMBER	About Big Data	Learning about how to work on Big data	Constructive Approach	Green board, Computer, learning Video	Real life situation	Create one chart on big data	
OCTOBER	**MID TERM EXAM**						
	About Machine Learning	Learning about how machine are learning and working;	Constructive Approach	Green board, Computer, learning Video	2 Real life situation		
	Cyber Threats, crimes and safety	Learning about how to protect our devices on internet and what is cybercrime.	Constructive Approach	Green board, Computer	1 Classroom discussion, Computer Practical		Create one power point file on types of cyber crimes

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DEPARTMENT OF COMPUTER SCIENCE

NOVEMBER	Learning HTML	Learning about how to create web pages using HTML	Constructive Approach	Green board, Computer, learning Video	1 Activities (Create HTML File) 2 Real life situations	Draw 10 HTML tags on a chart and explain their uses.	Every student creates one web site of 5 pages.
DECEMBER	**POST MID TERM EXAM**						
	About cascading style sheets	Learning about how to decorate the web pages.	Constructive Approach	Green board, Computer, learning Video	1 Activities Create HTML File using css 2 Real life situations		Decorate your web site using CSS.
JANURARY 25	Animation with krita	Learning about how to create animations using krita software.	Constructive Approach	Green board, Computer, learning Video	Real life situations		Create one animated file using krita software.
	REVISION						
FEB. 25	**FINAL PRACTICAL**						
MARCH 25	**ANNUAL EXAMINATION**						

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[Naveen Sharma]

SIGNATURE OF PRINCIPAL_____

[Anju Sharma]

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

DEPARTMENT OF COMPUTER SCIENCE

CLASS- VIII [COMPUTER+A.I.]

MONTH	CHAPTER	EXPECTED LEARNING OUTCOMES	PEDAGOGICAL APPROACH (TEACHING METHODS/ STRATEGIES)	ASSESSMENT TOOLS	RUBRICS	ART INTEGRATION	ICT INTEGRATION
APRIL	Computer Network	Learn about computer network	Constructive Approach	Black board	1 Classroom discussion 2 Problem based learning	Create chart draw some networking devices.	
JULY	Introduction to MS Access	Learning about MS Access software	Inquiry based approach	Black board, Computer, learning Videos	1 Classroom discussion 2 Problem based learning		Create one access file in computer.
AUGUST	Working with Queries Forms and reports	Learning about how to create Queries Forms and reports in MS Access	Constructive Approach	Green board, Computer, learning Video	Real life situations		Create one access file in computer. And apply queries on the file
	PRE MID TERM EXAM						
SEPTEMBER	Cloud computing	Learning about how to work on cloud computing and understand about cloud	Constructive Approach	Green board, Computer, learning Video	1 Activities (Create PPT file on clouded computing) 2 Real life situations		Crete one account on any cloud application and upload 10 files on clouded
	Basics of Python or Revision of previous classes	Learning about how to work on python language	Constructive Approach	Green board, Computer, learning Video	Real life situations		Create python programs (10 min.)

HAPPY DAYS SCHOOL, SHIVPURI (M.P.)

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	MID TERM EXAM						
OCTOBER	Learning Loops/ Iterative statements.	Learning about how to work on python language loops	Constructive Approach	Green board, Computer, learning Video	Activities (Create Python programs) 2 Real life situations		Create python programs using loops (5 min.)
NOVEMBER	Sound Editing with Audacity	Learning about how to edit sound with audacity software.	Constructive Approach	Green board, Computer, learning Video	1 Activities (Edit sound)		Edit one song using audacity software.
DECEMBER	Learning App development - Thunkable	Learning about how to create app	Constructive Approach	Green board, Computer, learning Video	1 Activities 2 Real life situations		Try to create one app using Thunkable software.
	POST MID TERM EXAM						
	Internet Ethics	Learning about how to use internet and rules of using internet.	Constructive Approach	Green board, Computer, learning Video	1 Activities 2 Real life situations	Create one chart and write down the advantages and disadvantages of internet.	
JANURARY 25	**REVISION**						
FEB. 25	**FINAL PRACTICAL EXAMINATION**						
MARCH 25	**ANNUAL EXAMINATION**						

SIGNATURE OF HOD _____

[Naveen Sharma]

SIGNATURE OF PRINCIPAL_____

[Anju Sharma]

HAPPY DAYS SCHOOL
SYLLABUS BREAK UP FOR 2024-2025

SUBJECT : ARTIFICIAL INTELLIGENCE **CLASS : IX** **SUBJECT COORDINATOR : NAVEEN SHARMA**

UNITWISE DISTRIBUTION

No.	UNIT	SUB-UNIT	DURATION	MARKS	
				THEORY	PRACTICAL
1	Introduction to AI	Excite	2.4 Hours (4 Periods)	10	10
		Relate	02 Hours (3 Periods)		
		Purpose	02 Hours (3 Periods)		
		Possibilities	02 Hours (3 Periods)		
		AI Ethics	3.6 Hours (6 Periods)		
2	AI Project Cycle	Problem Scoping	14 Hours (21 Periods)	10	10
		Data Acquisition	02 Hours (3 Periods)		
		Data Exploration	04 Hours (6 Periods)		
		Modelling	06 Hours (9 Periods)		
3	Neural Network		04 Hours (6 Periods)	10	10
4	Introduction to Python		70 Hours (105 Periods)	20	10
5	Co-curricular Skills				10
TOTAL			**112 Hours (168 Periods)**	**50**	**50**

Conceptual Framework

Introduction to Artificial Intelligence

Artificial Intelligence has always been a term which intrigues people all over the world. Various organisations have coined their own versions of defining Artificial Intelligence. Some of them are mentioned below:

Niti Aayog: National Strategy for Artificial Intelligence

AI refers to the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision making. Initially conceived as a technology that could mimic human intelligence, AI has evolved in ways that far exceed its original conception. With incredible advances made in data collection, processing and computation power, intelligent systems can now be deployed to take over a variety of tasks, enable connectivity and enhance productivity.

World Economic Forum

Artificial intelligence (AI) is the software engine that drives the Fourth Industrial Revolution. Its impact can already be seen in homes, businesses and political processes. In its embodied form of robots, it will soon be driving cars, stocking warehouses and caring for the young and elderly. It holds the promise of solving some of the most pressing issues facing society, but also presents challenges such as inscrutable "black box" algorithms, unethical use of data and potential job displacement. As rapid advances in machine learning (ML) increase the scope and scale of AI's deployment across all aspects of daily life, and as the technology itself can learn and change on its own, multi-stakeholder collaboration is required to optimize accountability, transparency, privacy and impartiality to create trust.

European Artificial Intelligence (AI) leadership, the path for an integrated vision

AI is not a well-defined technology and no universally agreed definition exists. It is rather a cover term for techniques associated with data analysis and pattern recognition. AI is not a new technology, having existed since the 1950s. While some markets, sectors and individual businesses are more advanced than others, AI is still at a relatively early stage of development, so that the range of potential applications, and the quality of most existing applications, have ample margins left for further development and improvement.

Encyclopaedia Britannica

Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing

systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

In other words, AI may be defined as:

AI is a form of intelligence; a type of technology and a field of study. AI theory and development of computer systems (both machines and software) are able to perform tasks that normally require human intelligence. Artificial Intelligence covers a broad range of domains and applications and is expected to impact every field in the future. Overall, its core idea is building machines and algorithms which are capable of performing computational tasks that would otherwise require human like brain functions.

Rationale

Schools have an important and responsible role to provide learning opportunities for the students and guide them on the path to success. There is need to channelize learning towards applying innovative skills and application that will contribute towards a robust future in a sustainable world.

A school is recognized because of the capability of its teachers to bring out the best in the students. Students are the ones who will shape the future of the country – they are the ones who need to pave the way to sustainable development and to preserve the planet.

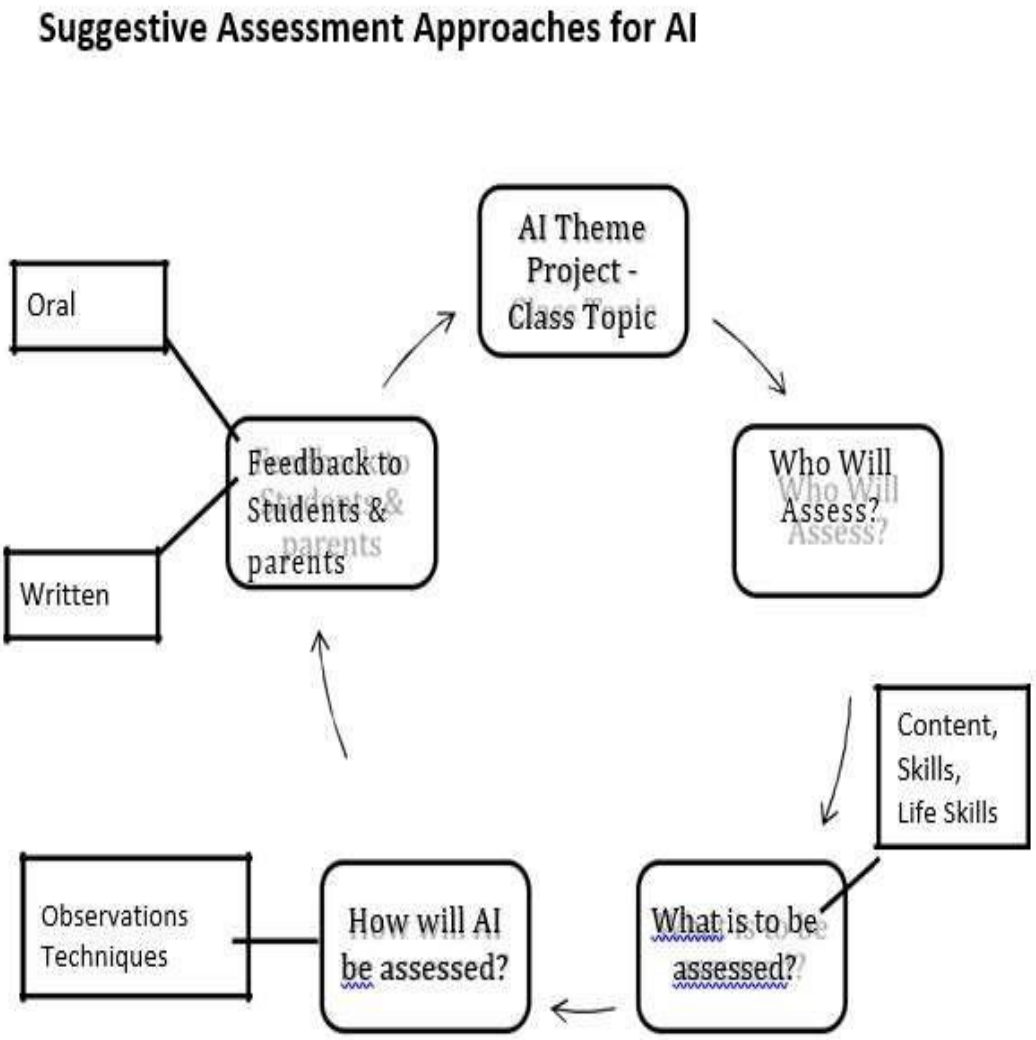
Much aligned to this are the sustainable development goals (SDG) that focus on the well-being of the planet and teachers have the role of introducing these SDGs to the students.

Students also need to be guided on recognizing the pros and cons of Artificial Intelligence and on being able to differentiate between what is right and acceptable and what is not.

The Purpose

Artificial intelligence is gaining the spotlight across applications in our personal and professional lives. We need to take charge of preparing ourselves and our students for the future. Hence, Central Board of Secondary Education (CBSE) has decided to introduce artificial intelligence as an elective subject

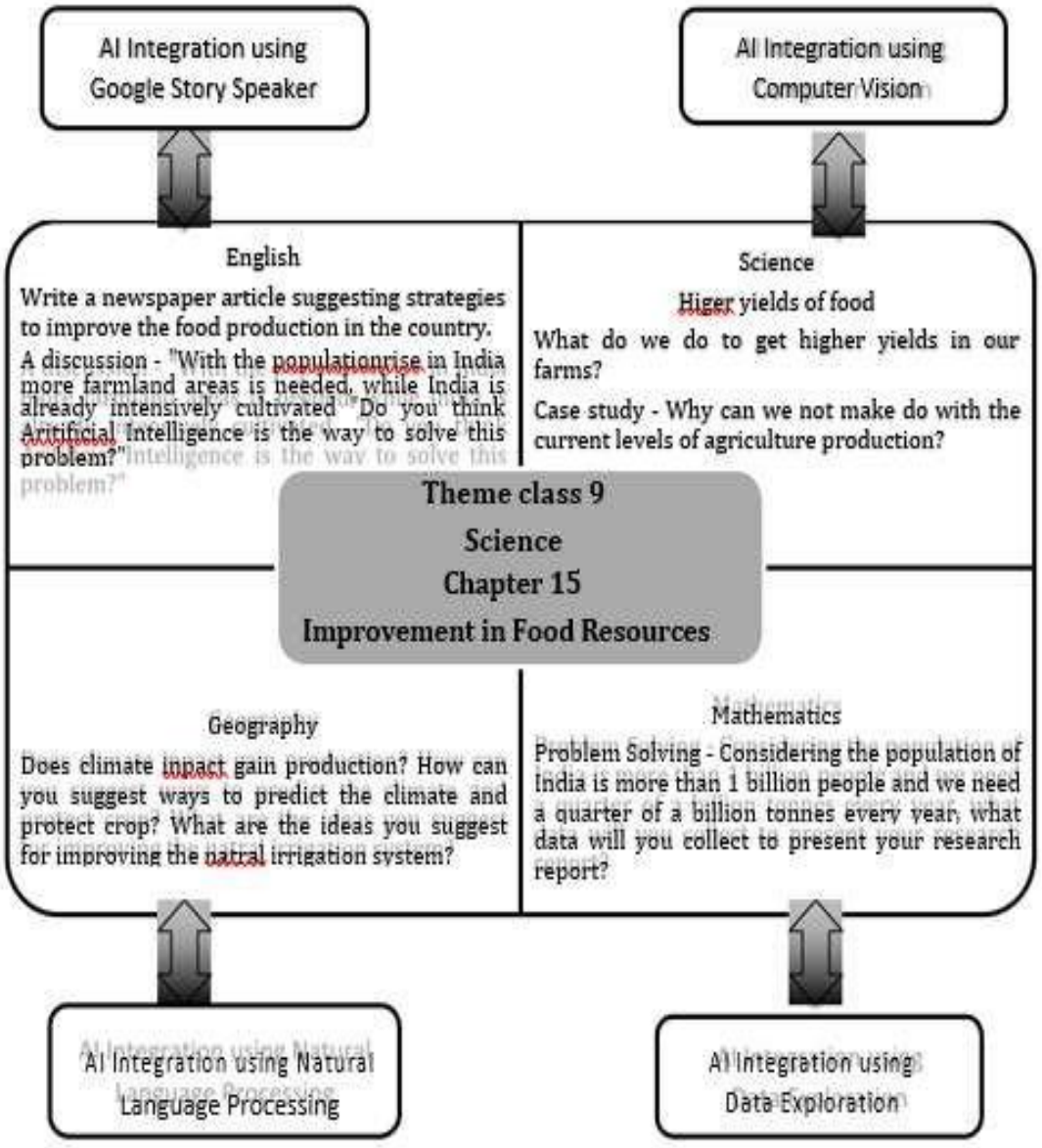
AI Curriculum Mapping



SUBJECT : ARTIFICIAL INTELLIGENCE **CLASS : IX** **SUBJECT COORDINATOR : NAVEEN SHARMA**

AI integration in the curriculum can be done in the following ways: Interdisciplinary approach across Subjects based on a selected theme.

Interdisciplinary Integration with Artificial Intelligence - Class 9



AI Learning Outcomes

Areas	Class 9
Unit 1.1: Excite **Introduction to Artificial Intelligence** **Three domains of AI**	After completion of the unit, learners will be able to describe: The relation and application of AI in their daily life Identify the 3 domains of AI
Unit 1.2: Relate **Smart home and Cities** **Interactive story writing**	Learners will be able to relate to the relevance and application of AI in the context of their homes Learners will be able to extend learning and apply it to interactive story writing
Unit 1.3: Purpose **Introduction to 17 sustainable development goals**	Learners will be able to identify and develop awareness for SDGs using AI solutions
Unit 1.4: Possibilities **Applications of AI in various fields**	Learners will be able to describe and explore the application of AI in different fields and various industries
Unit 1.5: Ethics **Introduction to Ethics** **Awareness to Ethics**	Learners will be able to describe some ethical concerns of AI with respect to inclusion, bias, and privacy.
Unit 2: AI project cycle **Introduction to AI Project Cycle** **Problem Scoping** **Data Acquisition** **Data Exploration** **Modelling – AI ,ML,DL** **Evaluation**	After completion of the AI project cycle learners will be able to: Describe, explain and apply the different stages in project cycle Enquire about and state the problem for the project cycle and create a system map Understand different ways for data acquisition and interpretation through graphs and visuals Model and evaluate the problem for the project cycle Recognise different type of graphs and explore various patterns and trends out of the data explored.
Unit 3: Neural Networks **Introduction to the concepts of Neural Networks**	Learners will be able to develop an understanding of Neural Networks Learners will be able to describe the working of Neural Networks

HAPPY DAYS SCHOOL
SYLLABUS BREAK UP FOR 2024-2025

SUBJECT: **ARTIFICIAL INTELLIGENCE** CLASS: **IX** **SUBJECT** COORDINATOR: **NAVEEN SHARMA**

COURSE OUTLINE

UNIT	SUB-UNIT	SESSION/ACTIVITY/PRACTICAL	LEARNING OUTCOMES
Introduction to AI		**Session:** Introduction to AI and setting up the context of the curriculum	To identify and appreciate Artificial Intelligence and describe its applications in daily life
		Ice Breaker Activity: Dream Smart Home idea Learners to design a rough layout of floor plan of their dream smart home.	
	Excite	**Recommended Activity:** The AI Game 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)	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.
		● **Game 3: Emoji Scavenger Hunt** (based on Computer Vision - CV)	
		● **Recommended Activity:** AI Quiz (Paper Pen/Online Quiz)	To undergo an assessment for analysing progress towards acquired AI-Readiness skills.
		Recommended Activity: To write a letter 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	To imagine, examine and reflect on the skills required for futuristic job opportunities.
	Relate	**Video Session: To watch a video** Introducing the concept of Smart Cities, Smart Schools and Smart Homes	Learners to relate to application of Artificial Intelligence in their daily lives.
		Recommended Activity: **Write an Interactive Story** Learners to draw a floor plan of a Home/School/City and write an interactive story around it using **Story Speaker** extension in Google docs.	To unleash their imagination towards smart homes and build an interactive story around it. To relate, apply and reflect on the Human-Machine Interactions.
	Purpose	**Session:** Introduction to **sustainable development goals**	To understand the impact of Artificial Intelligence on

SUBJECT : ARTIFICIAL INTELLIGENCE **CLASS : IX** **SUBJECT COORDINATOR : NAVEEN SHARMA**

		Recommended Activity: Go Goals Board Game ● Learners to answer questions on Sustainable Development Goals	Sustainable Development Goals to develop responsible citizenship.
	Possibilities	**Session: Theme-based research and Case Studies** ● Learners will listen to various case-studies of inspiring start-ups, companies or communities where AI has been involved in real-life. ● Learners will be allotted a theme around which they need to search for present AI trends and have to visualise the future of AI in and around their respective theme.	To research and develop awareness of skills required for jobs of the future. To imagine, examine and reflect on the skills required for the futuristic opportunities.
		Recommended Activity: Job Ad Creating activity ● Learners to create a job advertisement for a firm describing the nature of job available and the skill-set required for it 10 years down the line. They need to figure out how AI is going to transform the nature of jobs and create the Ad accordingly	To develop effective communication and collaborative work skills.
	AI Ethics	**Video Session: Discussing about AI Ethics** **Recommended Activity: Ethics Awareness** ● Students play the role of major stakeholders and they have to decide what is ethical and what is not for a given Scenario.	To understand and reflect on the ethical issues around AI.
		Session: AI Bias and AI Access ● Discussing about the possible bias in data collection ● Discussing about the implications of AI technology	To gain awareness around AI bias and AI access.
		Recommended Activity: Balloon Debate ● 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. ● They have to come up with their points as to why AI is beneficial/harmful for the society.	To let the students analyse the Advantages and disadvantages of Artificial Intelligence.

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SYLLABUS BREAK UP FOR 2023-2024

AI Project Cycle	Problem Scoping	**Session: Introduction to AI Project Cycle** ● Problem Scoping ● Data Acquisition ● Data Exploration ● Modelling ● Evaluation	Identify the AI Project Cycle framework.
		Activity: Brainstorm around the theme provided and set a goal for the AI project. ● Discuss various topics within the given theme and select one. ● List down/ Draw a mindmap of problems related to the selected topic and choose one problem to be the goal for the project.	Learn problem scoping and ways to set goals for an AI project.
		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.	Identify stakeholders involved in the problem scoped. Brainstorm on the ethical issues involved around the problem selected.
		Activity: Data and Analysis ● What are the data features needed? ● Where can you get the data? ● How frequent do you have to collect the data? ● What happens if you don't have enough data? ● What kind of analysis needs to be done? ● How will it be validated? ● How does the analysis inform the action?	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.
		Presentation: Presenting the goal, actions and data.	Share what have the students discussed so far.
	Data Acquisition	**Activity: Introduction to data and its types.** ● Students work around the scenarios given to them and think of ways to acquire data.	Identify data requirements and find reliable sources to obtain relevant data.
	Data Exploration	**Session: Data Visualisation** ● Need of visualising data ● Ways to visualise data using various types of graphical tools.	To understand the purpose of Data Visualisation

		Recommended Activity: Let's use Graphical Tools ● To decide what kind of data is required for a given scenario and acquire the same. ● To select an appropriate graphical format to represent the data acquired. ● Presenting the graph sketched.	Use various types of graphs to visualize acquired data.
	Modelling	**Session: Decision Tree** ● To introduce basic structure of Decision Trees to students.	Understand, create and implement the concept of Decision Trees.
		Recommended Activity: Decision Tree ● To design a Decision Tree based on the data given.	
		Recommended Activity: Pixel It ● To create an "AI Model" to classify handwritten letters. ● Students develop a model to classify handwritten letters by diving the alphabets into pixels. ● Pixels are then joined together to analyse a pattern amongst same alphabets and to differentiate the different ones.	Understand and visualise computer's ability to identify alphabets and handwritings.
Neural Network		**Session: Introduction to neural network** ● Relation between the neural network and nervous system in human body ● Describing the function of neural network.	Understand and appreciate the concept of Neural Network through gamification.
		Recommended Activity: Creating a Human Neural Network ● Students split in four teams each representing input layer (X students), 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 layers after some processing. The output layer finally gets all information and gives meaningful information as output.	

Introduction to Python		**Recommended Activity: Introduction to programming** using Online Gaming portals like Code Combat.	Learn basic programming skills through gamified platforms.
		Session: Introduction to Python language ● Introducing python programming and its applications	Acquire introductory Python programming skills in a very user-friendly format.
		Practical: Python Basics ● Students go through lessons on 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.	
		Practical: Python Lists ● Students go through lessons on Python Lists (Simple operations using list) ● Students will try some basic problem solving exercises using lists on Python Compiler.	

ASSESSMENT

After completion of each unit, the students can be evaluated on the basis of following skills:

Conceptual Skills	Technical Skills	Life Skills
Conceptual understanding of AI AI applications and three domains of AI Knowledge Enhancement in 3 AI Domains: Data, Computer Vision & Natural Language Processing Mind mapping Problem Identification Data Acquisition Data Exploration Graphical Representation Neural Network	Ability to use AI Powered Tools Troubleshooting Skill Basic programming skills Basic Python	Thinking Skills Problem Solving Creative thinking Critical Thinking Decision Making Skills Social Skills - Teamwork Team Building Skills Leadership Self-Awareness Empathy Effective Communication Skills Oral & Written Presentation

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[Naveen Sharma] **[Anju Sharma]**

HAPPY DAYS SCHOOL
SYLLABUS BREAK UP FOR 2024-2025

ARTIFICIAL INTELLIGENCE **CLASS : X** **SUBJECT COORDINATOR : NAVEEN SHARMA**

PT	DURATION	UNIT/CHAPTERS	PRACTICALS/PROJECTS	Working Days
PERIODIC TEST - I	APRIL	**Part A - Employability Skills** **Unit 2: Self-management Skills -**Stress Management, Self-awareness — Strength and Weakness Analysis, Self-motivation, Self-regulation — Goal Setting and Time Management **Part B – Subject Specific Skills** **Unit 3 – Advance Python (To be assessed through practical's)** **Recap -** Jupyter Notebook, Introduction to Python, Python Basics **Unit 4 Data Sciences (Theory)-** Introduction to Data Science, Applications of Data Science, Revisiting AI Project Cycle, Data Collection, Data Access **Python Packages(Practical) -** Python data Sciences (Numpy, Pandas, Matplotlib), Statistics Learning & Data Visualization (Statistics and Standard Deviation) **K-nearest neighbour model (Optional) -** Personality Prediction, Understanding K-nearest neighbour model	Suggested activities given in the support material by CBSE Activities suggested in CBSE study material Python programs	25
	JUNE	**Unit 2 : AI Project Cycle** **Introduction:** Introduction to AI Project Cycle**,** Problem Scoping Understanding problem scoping and Sustainable Development Goal, Data Acquisition, Simplifying data acquisition, Data Exploration, Visualizing Data, Modelling, Introduction to modelling, Introduction to Rule Based & Learning Based AI Approaches, Introduction to Supervised, Unsupervised & Reinforcement Learning Models, Neural Networks, Evaluating the idea!	Suggested activities given in the support material by CBSE	**17**

HAPPY DAYS SCHOOL
SYLLABUS BREAK UP FOR 2024-2025

ARTIFICIAL INTELLIGENCE **CLASS : X** **SUBJECT COORDINATOR : NAVEEN SHARMA**

PT	DURATION	UNIT/CHAPTERS	PRACTICALS/PROJECTS	Working Days
PERIODIC TEST - I	JULY	**Part A - Employability Skills:** **Communication Skills:** Methods of communication, Verbal communication, Non-verbal communication, Communication Cycle and Importance of feedback, Barriers of effective communication, Writing Skills – Part of Speech, Writing Skills – Sentences **Part B – Subject Specific Skills** **Unit 1: Introduction to AI- Foundational Concepts of AI** What is intelligence?, Decision Making, What is Artificial Intelligence and what is not? **Basics of AI: Let's Get started** Introduction to AI and related terminologies, Introducing AI, ML, & DL, Introduction to AI Domains (Data, CV & NLP), Gamified tools for each domain , Applications of AI, AI ethics	Activities suggested in CBSE study material	**21**
PERIODIC TEST - II (MID TERM)	AUGUST	**Part A : Employability Skills - ICT Skills** Basic Computer Operations, Performing Basic File Operations, Computer Care and Maintenance, Computer Security and Privacy **Part B – Subject Specific Skills Unit 5 – Computer Vision (Theory) -** Introduction to Computer Vision, Applications of CV, Understanding CV Concepts (Computer Vision Tasks, Basics of Images-Pixel, Resolution, Pixel value, Grayscale and RGB images) **Open CV (Practical) -** Introduction to Open CV, Image Processing **Convolution Operator (Optional) -** Understanding Convolution Operator, Introduction CNN, Understanding CNN, Kernel, Layers Testing CNN	Activities suggested in CBSE study material Activities based on the topics	**23**

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PT	DURATION	UNIT/CHAPTERS	PRACTICALS/PROJECTS	Working Days
PERIODIC TEST - II (MID TERM)	September	**Part A – Employability Skills : Entrepreneurial Skills** Entrepreneurship and Society, Qualities and Functions of an Entrepreneur Myths about Entrepreneurship, Entrepreneurship as a Career Option **Part B Subject Specific Skills : Unit 6 Natural Language Processing** Introduction to Natural Language Processing, NLP Applications, Revisiting AI project cycle, Introduction to Chatbots, Human Language VS Computer Language, Text Processing, Data Processing, Bag of Words, TFIDF**(Optional)**, NLTK**(Optional)**	Activities suggested in CBSE study material	**20**
	OCTOBER	**Part A : Employability Skills - Unit 5 Green Skills** Sustainable Development, Our Role in Sustainable Development	Activities suggested in CBSE study material	**8**
PRE-BOARDS	**NOVEMBER**	**Part B: Subject Specific Skills** **Unit 7 Evaluation** • Introduction to model evaluation • Confusion Matrix • Understanding Accuracy, Precision, Recall & F1 Score Practice Evaluation	Activities based on the topics	**16**
	DECEMBER	**PRE BOARD EXAMINATION**		

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PT	DURATION	UNIT/CHAPTERS	PRACTICALS/PROJECTS	Working Days
PRE-BOARDS	JANUARY 2024	Thorough Revision for the Final Examinations		12

Note :
1. The manner of taking the above mentioned practical and project work may differ as per the subject teacher.
2. The syllabus for the Periodic Test will be discussed prior to all the respective examinations as usual.

SIGN. OF HOD_____ **SIGN. OF PRINCIPAL**_____

[Naveen Sharma] **[Anju Sharma]**