6

DIGICODE AI

Teacher's Manual

Extended Support for Teachers

ORANGE
www.orangeeducation.in
www.thetouchpad.com

Teacher's Time Table

Periods / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										

Development Milestones in a Child

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.

Age 5 - 8 Years	
Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

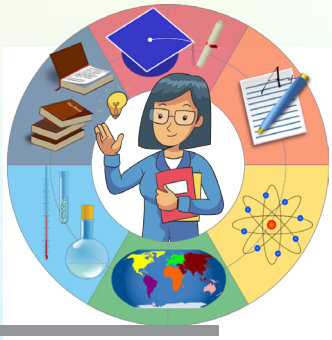
"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/Social	• Self-esteem tends to rise • Peer groups emerge

Age 11 - 20 Years	
Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

"Family is the most important thing in the world."



Teaching Pedagogies

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class:

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

↓

During the class:

Present the lesson plan.

↓

After the class:

Reflect on what worked well and why. If needed, revise the lesson plan.

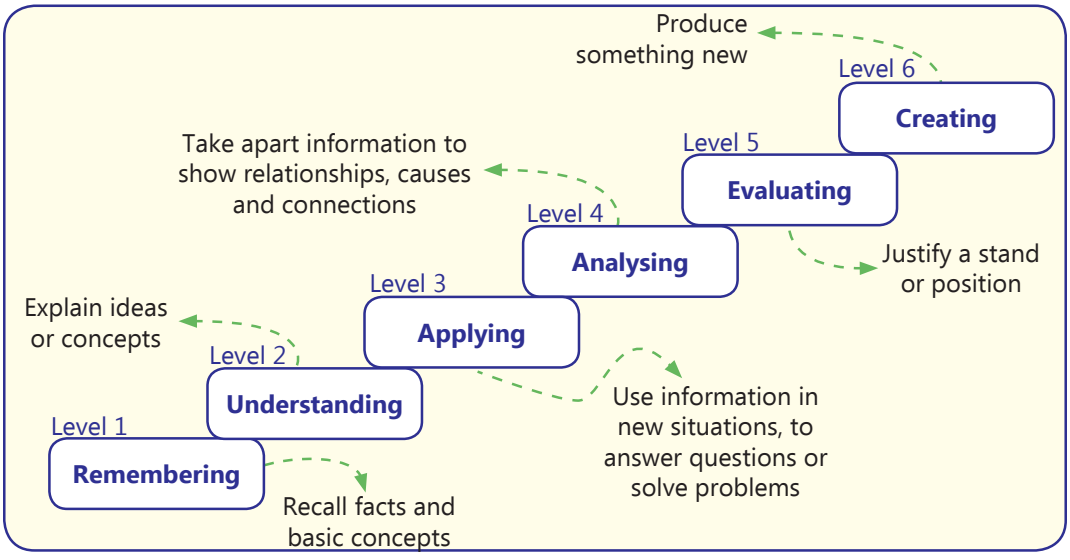
"Knowing yourself is the beginning of all wisdom."

Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.

Bloom's Taxonomy

Bloom's Taxonomy was created by **Dr Benjamin Bloom** and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical).However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

"If you have no confidence in self, you are twice defeated in the race of life."

Class 6

Lesson Plan

DigiCode AI

1. Safeguarding your Computer

Teaching Objectives

Students will learn about

- ☞ Cyber Crimes
- ☞ Protecting your Computer from Illegal Access
- ☞ Protecting Your Computer from a Computer Malware

Number of Periods
2

Teaching Plan

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 7 of the main course book.

Let the students know that a computer also falls sick as harmful files and applications damage it.

Explain to the students about cybercrimes, which are unlawful acts conducted by utilizing computers and smart devices via the internet.

Tell the students about the most commonly used ways to commit cybercrimes including Cyberbullying, Spamming, Hacking, Online Transaction Fraud and Plagiarism.

Make the students understand the rules for using social media.

Explain to the students how to protect computers from illegal access.

Make them understand about the importance of authentication to protect the data.

Explain that a computer malware is a software made to cause harm to your system.

Make the students aware of diffrent types of malware like virus, worm, trojan horse, spyware, adware, etc.

Let them know about the most dangerous malwares known such as Wabbit virus, ILOVEYOU virus, Code Red worm, Mydoom worm, Storm worm, Zeus, Emotet, Pegasus, etc.

Make them aware of the various harms caused by computer malware.

Let the students know about the symptoms of an infected computer.

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Make them understand how one can protect one's computer.

Finally, let them know that an antivirus is a set of programs that identify and remove malware. Some of the well-known antivirus programs are Norton, Quick heal, AVG, McAfee, Symantec, Kaspersky, etc.

Ask the students to solve the exercise BYTE QUEST given on page 16.

Extension

Ask the students some oral questions based on this chapter.

Q. Can computer also fall sick?

Q. What do you understand by the term cybercrimes?

Q. What is cyberbullying?

Q. Define spamming.

Q. What is hacking?

Q. How can you protect yourself from an online transaction fraud?

Q. What do you mean by plagiarism?

Q. Name some methods to protect your computer from illegal access.

Q. What is a computer malware?

Q. What is trojan horse?

Q. Name some most dangerous malwares known.

Q. What are the harms caused by computer system?

Q. Name a few sources through which a computer gets infected.

Q. What are the symptoms of an infected computer?

Q. How can you protect your computer?

Q. What is an antivirus?

Q. Name some well-known antivirus programs.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 17, 18 and 19 in the main course book as TECH READY. Tell the students to do the TECH TWISTER given on page 19 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 19 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like BYTE TASK and Go Online on page 20 of the main course book will enhance the ability of the students and serve as a Technology Literacy and Experiential Learning activities.

Suggested Activity

Ask the students to find more about the computer malware and popular antivirus.

2. Formulas and Functions in Excel

Teaching Objectives

Students will learn about

- ☞ Different Ways to Enter Formulas
- ☞ Cell Referencing in Formulas and Its Types
- ☞ Functions
- ☞ Understanding Cell Range
- ☞ Customise Worksheet Tab

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 21 of the main course book.

While teaching this chapter, tell the students that Excel has some built-in formulas called functions.

Share with the students the basic elements and rules of writing a formula in Excel.

Show them the different methods of copying and pasting a formula.

Tell them the order of operation followed in Excel.

Introduce cell referencing as use of cell address while writing a formula.

Make them understand the different types of cell referencing and the difference between the three – Absolute, Relative and Mixed.

Tell the students about rules for using Functions and different categories of Functions in Excel.

Demonstrate the use of mathematical functions – SUM, PRODUCT, MOD, SQRT, INT, POWER, COUNT, ROUND and ABS.

Demonstrate the use of text functions – CONCATENATE, LEFT, RIGHT, LEN, UPPER and LOWER.

Demonstrate the use of logical functions – MAX, MIN, AVERAGE and IF.

Demonstrate the use of date functions – TODAY, MONTH, YEAR, DAY, NOW, HOUR and MINUTE.

Ask the students to solve the exercise given on page 28 and 34 as BYTE QUEST.

Extension

Ask the students some oral questions based on this chapter.

Q. What are Functions in Excel?

Q. Name the different elements of a formula in Excel.

Q. What is the order of operation followed in Excel?

Q. Define cell referencing.

Q. Name some important categories of Functions.

Q. State the purpose of SUM / SQRT / MOD / COUNT / LEN / RIGHT / TODAY / MAX Function.

Q. What is the syntax of PRODUCT / INT / POWER / CONCATENATE / LEFT / UPPER / LOWER / MIN / AVERAGE function?

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Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 35 and 36 in the main course book as TECH READY. After solving the course book exercises, tell the students to solve TECH TWISTER activity given on page 36. Ask the students to answer the questions given as Competency-based/Application-based questions on page 37 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like BYTE TASK given on page 37 will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activity.

Suggested Activity

Ask the students to enter their last mark sheet in Excel and calculate total marks scored, average marks scored, maximum and minimum marks amongst all the marks and the number of subjects using various Functions used in Excel.

3. Charts in Excel

Teaching Objectives

Students will learn about

- ☞ Charts in Excel
- ☞ Sorting Data

Teaching Plan

Number of Periods	
Theory	Practical
2	3

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 38 of the main course book.

While teaching this chapter, tell the student to the concept of charts and their importance in data representation using Excel.

Show them the different types of charts available in Excel and their applications.

Explain the process of sorting data in Excel.

Show the different components of an Excel chart.

Demonstrate the steps of:

- Creating a chart.
- Modifying a chart by changing its type, layout and design.

Demonstrate and explain to the students the procedure to apply sorting in MS Excel.

Explain and demonstrate custom sort.

Ask the students to solve the exercise given on page 43 as BYTE QUEST.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the purpose of using charts in Excel?

Q. Can you name some components of a chart in Excel?

Q. Explain the difference between the X-axis and Y-axis in a chart.

Q. Why do you think it's important to have a chart title?

Q. What are the types of charts available in Excel?

Q. What is the significance of sorting data in Excel?

Q. Can you describe the difference between sorting data in ascending order and descending order?

Q. How do gridlines help in understanding data displayed in a chart?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 45 and 46 in the main course book as TECH READY. After solving the course book exercises, tell the students to solve TECH TWISTER given on page 46. Ask the students to answer the questions given as Competency-based/Application-based questions on page 47 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like BYTE TASK given on page 47 will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activity.

Suggested Activity

Ask the student to collect the temperature data for the past 4 days of your city and create a line chart in Excel to visualize the trend.

4. Advanced Features of PowerPoint 2016

Teaching Objectives

Students will learn about

- ☞ Slide Views
- ☞ Animation
- ☞ Importing Data from other Applications
- ☞ Slide Transition
- ☞ Uses of Media Clips and Action Buttons

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 49 of the main course book.

While teaching this chapter, tell the students that PowerPoint 2016 is used to create electronic presentations.

Tell the students about different slide views in PowerPoint and how to effectively use them to create and navigate presentation.

Explain to the students that transitions are used to determine how the presentation moves from one slide to the next.

Tell the students about the various categories of slide transitions available in PowerPoint.

Demonstrate the application of transitions to slides in a presentation.

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Introduce animation as the feature that gives a moving effect to text and other objects on the slide.

Show to the students the steps involved in applying custom animation to various objects on a slide.

Tell the students the animation effects applied to different objects on a slide can be reordered.

Share with the students that running a presentation is called Slide Show.

Demonstrate to the students the various steps involved in running a slide show.

Show to the students how sound and audio files can be inserted into a presentation.

Demonstrate the steps involved in inserting a video file into a presentation.

Demonstrate the steps to import data from other applications into the presentation.

Ask the students to solve the exercise given on pages 54 and 60 as BYTE QUEST.

Extension

Ask the students some oral questions based on this chapter.

Q. Define slide area, slides pane and notes pane.
Q. What do you mean by notes page view?
Q. What is the shortcut key to start the slide show from the current slide?
Q. What do you understand by the term loop until next sound?
Q. What type of audio files can be inserted into a presentation?
Q. Can we add video files on a slide?
Q. Define transition.
Q. How many transitions can be applied to a slide?
Q. What happens if more than one slide transitions are added to a slide?
Q. What is meant by animation in PowerPoint?
Q. Can we reorder the animations applied to different objects on a slide?
Q. What is a Slide Show?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 62, 63 and 64 in the main course book as TECH READY. After solving the course book exercises, tell the students to solve TECH TWISTER given on page 64. Ask the students to answer the questions given as Competency-based/Application-based questions on page 64 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like BYTE TASK given on page 65 will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activity.

Suggested Activity

Divide the class into two teams. Ask one team to prepare charts on various types of pollution. Ask the other team to prepare a PowerPoint presentation on the same topic. Make the students share the benefits enjoyed and limitations faced by each team while working on their project.

5. Algorithmic Intelligence

Teaching Objectives

Students will learn about

- ☞ Algorithm
- ☞ Solving Problems using Algorithms and Flowcharts
- ☞ Flowcharts
- ☞ Mind Map

Teaching Plan

Number of Periods	
Theory	Practical
2	2

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 66 of the main course book.

While teaching this chapter, tell the students about how humans communicate and their language. Also give an introduction of problem solving techniques, algorithm, flowchart, etc.

Introduce algorithms as a set of steps in a sequential and ordered manner to solve any problem or to complete a task.

Encourage the students to write algorithms involving some basic tasks, such as going to the market to purchase a pen or solving mathematical problems.

Introduce flowcharts as diagrammatic representation of an algorithm.

Explain the shapes and usage of flowchart symbols covering Start / Stop box, Process box, Decision box, Input / Output box, Flow lines and Connectors.

Make the students learn the rules for drawing a flowchart.

Encourage the students to draw flowcharts for the algorithms written earlier.

Make the students aware of mind maps.

Let the students know how to draw a mind map.

Ask the students to solve the exercise given on pages 68 and 71 as CODE QUEST.

Extension

Ask the students some oral questions based on this chapter.

Q. What is an algorithm?

Q. What is a flowchart?

Q. Write the rules to draw flowcharts.

Q. What is mind map?

Q. How will you draw a mind map for computer?

Evaluation

After explaining the chapter, let the students do the exercises given on page 72 in the main course book as TECH READY. After solving the course book exercises, tell the students to try sections such as TECH TWISTER and 'Go Online' given on page 74 in the main course book. Ask the students to

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answer the questions given as Competency-based/Application-based questions on page 74 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like CODE TASK given on page 74 will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activity.

Suggested Activity

Ask the students to find some questions which can be solved using algorithm and flowchart.

6. Using MakeCode Arcade

Teaching Objectives

Students will learn about

- What is a Traffic Light System?
- What Exactly is Coding?
- Searching for a Word in Dictionary
- MakeCode Arcade
- Commonly Used Blocks
- Changing the Background
- Logical operators
- Nested Conditional Statements
- Where Else do we See Applications of Coding?
- What is a Programming Language?
- Pseudocode
- Components of Makecode Arcade Window
- Adding A Sprite
- Getting started with Block Coding
- Relational Operators
- Jump Statements

Teaching Plan

Number of Periods	
Theory	Practical
3	3

Before starting the chapter, ask the students to solve the question in Tech Set GO given on page 78 of the main course book.

While teaching this chapter, tell the students that coding is a process of creating codes to instruct a computer to perform a specific task.

Show them the uses of coding in day to day life.

Explain to the students about coding and programming language as well as syntax.

Demonstrate the steps to search a word in a dictionary.

Explain to the students about Pseudocode, characteristics of Pseudocode and its advantages.

Make them undesrstand about the concept of MakeCode Arcade.

Demonstrate the steps to start MakeCode Arcade.

Explain to the students about the components of MakeCode Arcade.

Tell them about the variety of code blocks used such as Sprites Blocks, Controller Blocks, Game Blocks, Music Blocks, Scene Blocks, Info Blocks, Loops Blocks, Logic Blocks, Variable Blocks, Math Blocks, Advanced Blocks, Animation Blocks, Images Blocks, Function Blocks, Array Blocks, Text Blocks, Console Blocks.

Demonstrate the steps to create a sprite using the image editor.

Show them the steps to change the background in MakeCode Arcade.

Explain to the students about Block Coding and how it is used in MakeCode Arcade.

Ask the students to read the Code Hint given on page 95.

Tell them about the Logical and Relational Operator and their types.

Explain to the students about Nested Conditional Statements, Jump Statements, Break Statements and Continue statements with their examples.

Ask the students to solve the exercise CODE QUEST given on pages 81, 84 and 100.

Extension

Ask the students some oral questions based on this chapter.

Q. What is coding?

Q. What is a programming language?

Q. Define syntax.

Q. What do you mean by the term Pseudocode?

Q. What are the advantages of Pseudocode?

Q. Define MakeCode Arcade.

Q. Name some components of MakeCode Arcade Window.

Q. Name any five blocks with their functions.

Q. What is the difference between logical and relational operator?

Q. What do you understand by the term Break statement?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 101 and 102 in the main course book as TECH READY. Tell the students to do TECH TWISTER given on page 103 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 103 of the main course book. Help the students to solve these questions. Help the students to solve these questions.

In Creative Assignment, activity like CODE TASK on page 103 of the main course book will enhance the ability of the students and serve as a Technology Literacy and Experiential Learning Activity.

Suggested Activity

Ask the student to create a program in a MakeCode Arcade to check whether the number is divisible by 5 or not.

7. Introduction to Python

Teaching Objectives

Students will learn about

- ☞ Features of Python
- ☞ Programming in Python
- ☞ Variables in Python
- ☞ Installing Python
- ☞ Input and Output in Python

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 104 of the main course book.

While teaching this chapter, tell the students that Python is a popular high-level programming language.

Also, give an introduction to Python and its uses to the students.

Explain the features of Python to the students.

Demonstrate the steps to download and install the Python software.

Teach the students about Programming in Python by explaining the two basic programming modes—Interactive Mode and Script Mode.

Demonstrate the steps to start Python and work in Interactive Mode as well as in Script Mode.

Show the steps to create a new file, writing, saving, and running a Python Program to the students.

Explain to the students that in Python, variables act as memory reference points where values are stored, allowing for later access or modification. The names assigned to these variables are referred to as identifiers.

Tell them about the rules of creating and naming the variables.

Ask the students to solve the exercise given on pages 110 and 111 as CODE QUEST.

Extension

Ask the students some oral questions based on this chapter.

Q. Define Python

Q. Who developed Python?

Q. What are the features of Python?

Q. Define Interactive Mode

Q. What are the two components of the Python IDLE window?

Q. What is the full form of IDLE?

Q. What do you mean by Script Mode?

Q. Define the print( ) function.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 112 and 113 in the main course book as TECH READY. After solving the course book exercises, tell the students to solve TECH TWISTER given on page 112 and 113. Ask the students to answer the questions given as Competency-based/Application-based questions on page 113 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like CODE TASK given on page 113 will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activity.

Suggested Activity

Ask the students to input ten names from the user and print them in the same line with a single space.

8. Human vs Machine Intelligence

Teaching Objectives

Students will learn about

- ☞ What is Intelligence?
- ☞ Artificial Intelligence
- ☞ Similarities between Humans and Machines
- ☞ Differences between Human and Artificial Intelligence
- ☞ Teaching Plan
- ☞ Human Intelligence
- ☞ Are Computers Smarter?

Number of Periods
2

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page number 115 of the main course book.

Let the students know that Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions.

Explain to the students that human brain is one of the most intricate and mysterious organs of the human body.

Let the students know that human body is extremely powerful and also capable of performing the following functions:

- Learn from different experiences
- Understand complex concepts
- Apply logic and reason to solve mathematical problems

- Recognise patterns
- Make inferences and decisions
- Retain information
- Communicate with other human beings through different parts of the body

Make the students understand that Artificial Intelligence is the ability to calculate, reason, perceive relationships and analogies, learn from experience, store and retrieve information from memory, solve problems, comprehend complex ideas, use natural language fluently, classify, generalise, and adapt new situations.

Make the students aware of the fact that Artificial Intelligence focuses on building smart machines that are capable of performing a wide range of tasks which usually requires human intelligence and cognition.

Explain to the students how computers are smarter than human beings.

Make the students understand the similarities and differences between humans and machines.

Ask the students to solve the exercise given on page 117 as AI QUEST.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Intelligence?

Q. What is Human Intelligence?

Q. What is Artificial Intelligence?

Q. Are Computers Smarter?

Q. What are the similarities between Humans and Machines?

Q. What are the differences between Humans and Machines?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 119 and 120 in the main course book as TECH READY. After solving the course book exercises, tell the students to solve Tech Twister given on page 120. Ask the students to answer the questions given as Competency-based/Application-based questions on page 120 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like AI TASK and Go Online given on page 120 of the main course book will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activities.

Suggested Activity

Ask the students to explore the areas where human intelligence is more useful than machines even today.

9. AI Technologies

Teaching Objectives

Students will learn about

- ☞ Optical Character Recognition
- ☞ Face Recognition
- ☞ Speech Recognition

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 121 of the main course book.

While teaching this chapter, tell the students that Artificial Intelligence (AI) is used in various areas in real life like character recognition, face recognition, speech recognition, and many more.

Tell the students about Optical Character Recognition (OCR) which is a technique to convert an image of text or physical document into editable form. It is also known as text recognition.

Demonstrate to the students that how does OCR work?

Explain to the students the role of AI in OCR.

Let the students know the areas where AI-Powered OCR is being used. Also, tell the benefits of AI-Powered OCR.

Teach the students about Speech recognition or speech-to-text and vice versa which means the ability of a machine or program to identify words spoken aloud and convert them into readable text.

Let the students understand the four steps involved in the working of speech recognition.

Explain to the students the role of AI in Speech Recognition.

Let the students know the areas where AI-powered Speech Recognition is being used. Also, tell the benefits of AI-powered Speech Recognition Systems.

Teach the students about Face Recognition which is a technology which is to identify an individual's face. One of the most famous examples of face recognition technology is a face lock in a smartphone.

Let the students understand the four steps involved in the working of Face recognition.

Explain to the students the role of AI in Face Recognition.

Let the students know the areas where AI-powered Face Recognition is being used. Also, tell the benefits of AI-powered Face Recognition Systems.

Also, teach the students through Topic Animation.

Encourage the students to walk through the chapter and ask them to play the game given on page 124 on their own under the name AI GAME after learning about the rules and basics.

Ask the students to solve the exercise given on page 124 as AI QUEST.

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Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Speech recognition?

Q. Who first introduced the concept of face recognition in the 1960s?

Q. What are the benefits of AI-powered OCR?

Q. What is the full form of OCR?

Q. What do you mean by speech recognition?

Q. Name the technology which is to identify an individual's face?

Q. What are the areas face recognition technology is used?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 127 and 128 of in the main course book as TECH READY. After solving the course book exercises, tell the students to solve Tech Twister given on page 128. Ask the students to answer the questions given as Competency-based/Application-based questions on page 128 of the main course book. Help the students to solve these. Tell the students to do TECH TWISTER given on page 128 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like AI TASK on page 128 of the main course book will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activity.

Suggested Activity

Ask the students to try Quizzes and play games on the Kuki chatbot by using the link given below:

https://chat.kuki.ai/chat

Ask the students to explore the areas where human intelligence is more useful than machines even today.

10. Types of Robots

Teaching Objectives

Students will learn about

- ☞ Categories of Robots
- ☞ Robots Vs Humans—Advantages and Disadvantages

Teaching Plan

Before starting the chapter, ask the students to solve the question in TECH SET GO given on page 129 of the main course book.

Number of Periods	
Theory	Practical
2	1

Define the meaning of robots and categories of robots with proper examples:

- Industrial Robots
- Service Robots
- Military Robots
- Robots in Medicine
- Toy Robots
- Collaborative Robots or Cobots
- Security Robots
- Robots in the Agriculture Industry
- Robots in Space and Research
- Humanoid

Explain the advantages and disadvantages between Robots Vs Humans to the students.

Ask the students to read the AI Fact given on page 130, 131 and 133.

Ask the students to solve the exercise AI QUEST given on page 137.

Extension

Ask the students some oral questions based on this chapter.

Q. Define the following:

a. Industrial Robots
b. Collaborative Robots or Cobots
c. Service Robots
d. Security Robots
e. Military Robots
f. Robots in the Agriculture Industry
g. Robots in Medicine
h. Robots in Space and Research
i. Toy Robots
j. Humanoid

Q. Write advantages of Robots Vs Human.

Q. Write disadvantages of Robots Vs Human.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 138 and 139 in the main course book as TECH READY. After solving the course book exercises, tell the students to solve Tech Twister given on page 140. Ask the students to answer the questions given as Competency-based/Application-based questions on page 140 of the main course book. Help the students to solve these. Tell the students to do TECH TWISTER given on page 140 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like AI TASK and GO Online given on page 140 of the main course book will enhance the ability of the students and serve as Experiential Learning and Information Literacy Activities.

Suggested Activity

Ask the students to search about different types of robots other than taught in this chapter.