5

Computer Genius!

Teacher's Manual

Extended Support for Teachers

ORANGE
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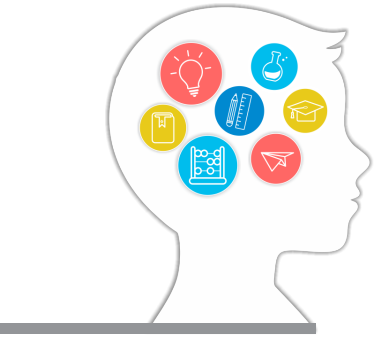
Teacher's Time Table

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.

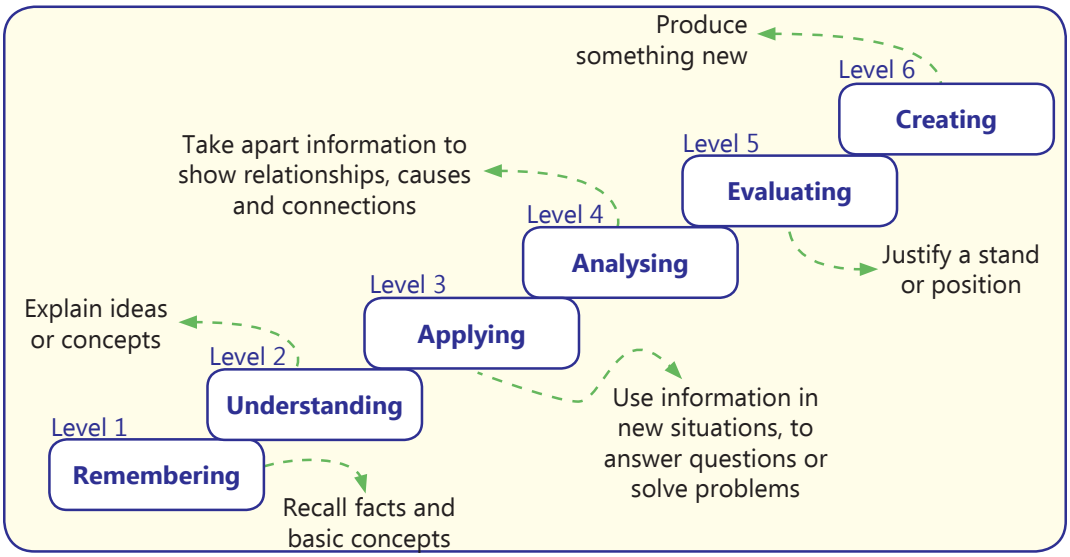
"Knowing yourself is the beginning of all wisdom."

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 5

Lesson Plan

Computer Genius

1. Data Storage and Memory

Teaching Objectives

Students will learn about

- ☞ Data and Information
- ☞ Measuring the Computer's Memory
- ☞ Memory

Number of Periods	
Theory	Practical
3	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on page 7 of the main course book.

While teaching this chapter, tell the students that like human beings, computers also have memory to store all data and instructions for performing various tasks.

Explain to the students that the collection of row and unorgnised facts is called data and the organised data is called information.

Let the students know that the data and instructions that are entered into the computer using input device are stored inside the memory.

Tell the students about the two types of computer memory – primary memory and secondary memory.

Share with the students that the primary memory of the computer is fixed on the motherboard of the computer.

Explain in detail about the types of Primary Memory covering:

- **Random Access Memory (RAM)** – the volatile memory
- **Read Only Memory (ROM)** – the non-volatile memory

Share with the students the meaning and difference between the two types of RAM – Dynamic RAM and Static RAM.

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Give a brief introduction about secondary memory or secondary storage devices covering in detail:

- **Magnetic Disk** (Hard Disk – Internal and External)
- **Optical Disc** (CD, DVD, Blue-Ray Disc)
- **Flash Drive** (Pen Drive, Memory Card)

Introduce byte as the basic unit of measuring computer memory and nibble as half a byte.

Share with the students the meaning and relationship between higher units of measurement of computer memory – KB, MB, GB, TB, PB, EB, ZB, YB, Brontobyte and Geopbyte.

Ask the students to solve the exercise as Quest given on page 11 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. What is computer memory?

Q. What is primary memory?

Q. Name the different types of primary memory.

Q. Expand RAM / ROM.

Q. What are the different types of RAM?

Q. What is the difference between primary and secondary memory?

Q. Name the categories in which secondary storage devices are divided into.

Q. Expand CD and DVD.

Q. Define a pen drive and memory card.

Q. Define a byte.

Q. Name any three higher units of measurement of computer memory.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 12 and 13 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 13 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 13 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Lab Activity given on page 13 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Technology Literacy activity.

Suggested Activity

Ask the students to research and collect information about some secondary storage devices like floppy disks, which have now become obsolete.

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2. Introduction to Excel 2016

Teaching Objectives

- ☞ Features of Excel 2016
- ☞ Components of Excel 2016 Window
- ☞ Creating a New Workbook
- ☞ Saving a Workbook
- ☞ Starting Excel 2016
- ☞ Types of Data
- ☞ Entering Data in the Worksheet

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on page 14 of the main course book.

While teaching this chapter, tell the students that MS Excel is the most commonly used interactive spreadsheet program that is used to perform mathematical calculations, analyse data, and store data in tabular format.

Explain to the students about the features of Excel 2016:

- Functions and Formulas
- Formatting Features
- Auto-Calculation
- Fast Searching
- Auto Fill
- Graphically View Data

Demonstrate to the students the steps to start Excel 2016.

Familiarize the students with the various components of Excel 2016 window covering Title Bar, File Tab, Quick Access Toolbar, Ribbon, Formula Bar, Name Box, Worksheet, Worksheet Tabs, Worksheet Tab Navigation Buttons, Status Bar, Row, Column, Row and Column Heading, Cell, Active Cell, Mouse Pointer, Cell Range, Workbook and Block.

Tell the students that Excel 2016 offers various data types to be entered in a cell covering Numbers, Text, Date and Time.

Demonstrate to the students the steps to:

- Create a new workbook
- Enter data in a worksheet
- Save a workbook

Ask the students to solve the exercise as Quest given on page 19 of the main course book.

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Extension

Ask the students some oral questions based on this chapter.

Q. What is Excel 2016?

Q. What are the features of Excel 2016?

Q. Name any five components of Excel 2016.

Q. Define Formula Bar / Name Box / Row / Column / Cell / Active Cell / Cell Range.

Q. State the situation when Number / Text / Date and Time data type used for.

Q. State the shortcut key to save an Excel worksheet.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 22, 23 and 24 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on pages 24 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 24 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on page 25 of the main course book will enhance the ability of the students and serve as an Experiential Learning and Technology Literacy activity.

Suggested Activity

Ask the students to prepare a table in this format for their family members.

S.No.	Name	Relation with Me	Date of Birth	Age

3. More on PowerPoint 2016

Teaching Objectives

Students will learn about

- Using Built-in Templates
- Specifying Alignment
- Inserting WordArt
- Inserting SmartArt
- Enhancing the Look of a Presentation
- Inserting Pictures
- Inserting Shapes
- Running a Slide Show

Number of Periods	
Theory	Practical
3	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on page 26 of the main course book.

While teaching this chapter, tell the students that PowerPoint 2016 is a presentation software that allows creating interesting and exciting presentations and representing them to the audience through a slide show.

Tell the students that the built-in templates are a set of well-developed presentations in PowerPoint.

Demonstrate to the students the steps to use built-in templates.

Share with the students some important points to be remembered to make a simple and attractive presentation.

Tell the students that a theme is a set of predefined layouts that can be used to add a professional touch to the presentation.

Demonstrate to the students the steps to:

- Apply themes
- Choosing a theme
- Changing theme colour schemes
- Changing theme fonts
- Changing theme backgrounds

Explain to the students that Alignment option helps to align the text of the slide in various directions.

Demonstrate to the students the steps:

- Aligning the text
- Inserting picture from a file
- Inserting online picture
- Inserting picture using placeholders

Explain to the students that WordArt is a gallery which contains a set of text styles.

Demonstrate to the students the steps to:

- Inserting WordArt
- Inserting Shapes
- Resizing Shapes
- Filling colour in shapes

Share with the students that SmartArt is used to express a topic with the help of charts, diagrams, and lists to make it easy to understand.

Demonstrate to the students the steps to inserting SmartArt.

Demonstrate to the students the steps to run a slide show using Slide Show tab.

Ask the students to solve the exercise as Quest given on page 31 and 39 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. Define built-in templates.

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Q. How can we enhance the look of a presentation?
Q. Define theme.
Q. What is the use of alignment?
Q. Name the align options present in PowerPoint.
Q. What is WordArt?
Q. What are the two ways of inserting a picture on a slide?
Q. Define SmartArt.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 40, 41 and 42 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 41 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 42 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on page 42 of the main course book will enhance the ability of the students and serve as an Interdisciplinary Learning, and Experiential Learning activity.

Suggested Activity

Create a presentation on the topic "Are we conserving natural resources?". Use pictures to increase the effectiveness of the presentation.

4. Internet and E-mail

Teaching Objectives

Students will learn about

- The Internet
- How Does the Web Work?
- Using URLs
- Emoticons and Acronyms
- World Wide Web
- Using Web Browser
- E-Mail

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on page 44 of the main course book.

While teaching this chapter, tell the students that the internet is a computer network that connects hosts and end systems throughout the world.

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Give a brief history of the beginning of internet as ARPANET.

Introduce the concept of World Wide Web (WWW) with reference to basic terms covering web, web servers, posting/uploading, etc.

Explain to the students the process of how the web works.

Introduce web browser as software application designed to find hypertext documents on the web.

Show to the students the steps involved in the process of launching the web browser.

Tell the students about Uniform Resource Locator or URL (unique internet address) and their use while navigating on internet.

Show to the students the steps involved in the the process of using Address Bar.

Explain to the students about hyperlink which can be appear as text, an image, or a navigational tool.

Make the students recall E-mail as the process of exchanging messages electronically through communications network by using a computer.

Tell the students about the features of e-mail.

Share with the students the advantages of e-mail.

Explain the components of an e-mail address to the students.

Demonstrate in detail the steps involved in:

- Creating an e-mail account (with reference to some common folders of home page like Inbox, Sent, Outbox, Spam, and Trash)
- Composing and sending an e-mail (with reference to fields like To, Cc, Bcc and Subject)
- Attaching files to an e-mail
- Reading a received e-mail
- Logging In to an e-mail account
- Logout from the e-mail account (tell them the importance of this step)

Introduce the terms emoticons (representation of facial expressions) and acronyms (word formed from initial letters of a multi-word name).

Write some commonly used emoticons and acronyms on the class board to elaborate the concept.

Ask the students to solve the exercise as Quest given on page 48 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. What is World Wide Web?
Q. Define web server.
Q. How the web works?
Q. Expand URL.
Q. Define an e-mail.
Q. What do you understand by emoticons?
Q. What is an acronym?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 58, 59 and 60 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 60 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 60 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on Page 60 of the main course book will enhance the ability of the students and serve as an Experiential Learning and Media Literacy activity.

Suggested Activity

Ask the students to create an e-mail account. Send a birthday invitation to ten friends and/or relatives.

5. Data Processing

Teaching Objectives

Students will learn about

- ☞ Data and Information
- ☞ Representing Information
- ☞ Sorting Data
- ☞ Decoding

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on page 61 of the main course book.

Introduce Data and Information to the students in details with the help of proper examples for better understanding.

Explain to the students about how to represent information with the help of proper charts and tables.

Tell the students how to sort data and demonstrate the same with proper examples which are easy to understand.

Explain the meaning of Decoding to the students and ask them to use the reference given in the book to understand the concept.

Show examples for all the topics for better clarity of the lesson at the end.

Ask the students to solve the exercise as Quest given on page 63 and 64 of the main course book.

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Extension

Ask the students some oral questions based on this chapter.

Q. What is data?

Q. What is information?

Q. How can you represent information?

Q. What is sorting?

Q. How can you sort data?

Q. What is decoding?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 65 and 66 in the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 66 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 66 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on Page 66 of the main course book will enhance the ability of the students and serve as a Critical Thinking and Technology Literacy activity.

Suggested Activity

Ask the students to practise to find out more types of methods to represent information.

6. Creating Shapes in Scratch

Teaching Objectives

Students will learn about

- Pen Block
- Drawing Polygons in Scratch
- Drawing a Rectangle in Scratch
- Drawing a Line in Scratch
- Drawing a Square in Scratch
- Drawing a Circle in Scratch

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 70 of the main course book.

Tell the students about pen block and explain its use with using appropriate examples. Also, show the steps involved in adding pen blocks to the block category.

Introduce some pen blocks and their uses to the students.

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Show the steps involved in drawing a line in Scratch.

Explain to the students that polygons are 2D shapes with three or more straight lines and angles using some examples.

Tell the steps involved in drawing polygons in Scratch.

Explain the steps involved in drawing a square in Scratch.

Demonstrate the steps involved in drawing a rectangle in Scratch.

Show the steps involved in drawing a circle in Scratch.

Ask the students to solve the exercise as Quest given on page 74 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a pen block?

Q. How can you draw a line in Scratch?

Q. How can you draw a polygon in Scratch?

Q. How can you draw a rectangle in Scratch?

Q. How can you draw a square in Scratch?

Q. How can you draw a circle in Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 77 and 78 in the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 78 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 75 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on Page 79 of the main course book will enhance the ability of the students and serve as a Critical Thinking and Technology Literacy activity.

Suggested Activity

Ask the students to draw a triangle and circle together in a program.

7. Advanced Blocks & Game Creation

Teaching Objectives

Students will learn about

- ☞ Blocks Shapes in Scratch
- ☞ Variables
- ☞ Creating a Game
- ☞ Sensing Blocks
- ☞ Conditional Blocks

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Number of Periods	
Theory	Practical
3	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 80 of the main course book.

While teaching this chapter, tell the students that the blocks in Scratch are in different shapes.

Define briefly about the use of:

- Hat Blocks
- Boolean Blocks
- C Blocks
- Stack Blocks
- Reporter Blocks
- Cap Blocks

Explain the use of different Sensing blocks to the students.

Demonstrate the steps involved in the use of Sensing blocks.

Tell the students what are variables using appropriate examples along with types of variables.

Demonstrate to the students the steps involved in creating variables in Scratch.

Explain the Conditional Blocks to the students and the steps involved in this in detail.

Demonstrate how can one create a game in Scratch using appropriate blocks.

Ask the students to solve the exercise as Quest given on page 83 and 88 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. Define:

- Hat Blocks - Stack Blocks - Boolean Blocks
- Reporter Blocks - C Blocks - Cap Blocks

Q. What is a sensing block?

Q. What are variables?

Q. What are conditional blocks?

Q. What is the use of If, then block/If, then...else block?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 89, 90 and 91 in the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 90 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 91 of the main course book. Help the students to solve these questions.

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In Creative Assignment, activity like Lab Activity given on Page 91 of the main course book will enhance the ability of the students and serve as a Computational Thinking activity.

Suggested Activity

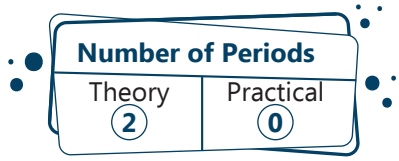
Ask the students to develop the story of Rabbit and Tortoise in Scratch.

8. AI in Popular Apps

Teaching Objectives

Students will learn about

- ChatGPT
- OLA
- Google Maps
- YouTube
- Famous AI Apps
- Amazon Echo & Google Nest
- Uber
- Swiggy
- Netflix



Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 93 of the main course book.

While teaching this chapter, tell the students that deep learning techniques will provide machine to perform high-level thoughts, image recognition.

Let them know about the popular tools and apps of AI which are:

- ChatGPT
- OLA
- Google Maps
- YouTube
- Amazon Echo & Google Nest
- Uber
- Swiggy
- Netflix

Ask the students to solve the exercise as Quest given on page 96 of the main course book.

Share with the students that an AI app is any application that integrates artificial intelligence into its functions and services.

Explain briefly about some AI apps:

- Siri
- Alexa
- Cortana

- Google Assistant
- ELSA Speak
- Socratic
- Fyle
- Youper
- Lensa AI

Also, teach the students through the Topic Animation of the lesson.

Encourage and ask the students to play the game as AI GAME given on page 96 of the main course book on their own after learning about the rules and basics.

Extension

Ask the students some oral questions based on this chapter.

Q. Name a virtual assistant that was released for iOS.

Q. Which app uses AI to remove fake news and offensive contents and also recommends videos based on users previous search history?

Q. When was Swiggy founded?

Q. Name the mental health assistant app.

Q. Which app provide useful directions and real-time traffic information?

Q. Name a ride-sharing app that is powered by AI and Machine Learning.

Q. How does the Socratic app help students?

Q. Name an expense management app.

Q. How does the Lensa AI app use AI?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 97 and 98 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 101 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 98 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on Page 102 of the main course book will enhance the ability of the students and serve as a Creativity and Experiential Learning 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

9. Trending Robots

Teaching Objectives

Students will learn about

- T-HR3
- Digit
- Robear
- Z-Machines
- Paro
- Zenbo
- Sophia
- RoboThespian
- Nao
- Leka
- Root
- Dash & Dot

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 103 of the main course book.

While teaching this chapter, tell the students that robots are automatically operated machines that work in place of humans.

Explain to the students that various applications of robots help in personal assistance, caregiving, education and entertainment with some examples.

Introduce to the students about the latest robots. Those are given below:

- T-HR3
- Digit
- Robear
- Z-Machines
- Paro
- Zenbo
- Sophia
- RoboThespain
- Nao
- Leka
- Root
- Dash & Dot

Also, show the topic animation of types of robots according to their applications.

Ask the students to solve the exercise as Quest given on page 104 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. Name the machines which are music-band that has a guitarist with 78 fingers and a drummer with 22 arms.

Q. Name the humanoid that mimics the movement of its human operator.

Q. Who is an actor that comes with a library of impressions, greetings, songs and gestures?

Q. Which robot helps exceptional children?
Q. Name the talking robot that is used for therapy.
Q. Who is Robear?
Q. Which robot has become a citizen of Saudi Arabia?
Q. Define Dash & Dot.
Q. What are robots?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 111, 112 and 113 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone given on page 113 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 122 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity given on Page 108 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Technology Literacy activity.

Suggested Activity

Ask the students to gather pictures of at least 10 different robots and paste them into an A3-size sheet. Also, write about where the robots are used in the field of AI.

10 Angles and Value Conversion

Teaching Objectives

Students will learn about

- Available Blocks in AI Connect
- Turning Turtle Left or Right
- Draw a Square
- Designing a Half Moon
- Input Blocks in AI Connect
- Conversion Blocks
- Convert a String Input to a Number
- Angles
- Draw a Triangle
- What is a Circle?
- Values
- Output Block and Commands
- Convert a Floating Number to an Integer

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before Starting the Chapter ask the students to solve the question in Let's Recap given on page 111 of the main course book.

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Explain the students that just like humans have ways to measure and visualize, computers use angles and values to perform tasks.

Introduce the students about primary blocks in AI Connect.

Explain the following:

- Angles
- Turning Turtle Left or Right
- Circle

Demonstrate to the students how can we draw triangle, square, and design a half moon.

Tell the students about Values in programming and also explain types of values with suitable examples.

Introduce Input Blocks and Output Blocks in AI connect.

Show to the students some conversion in AI connect with the help of conversion blocks:

Ask the students to solve the exercise Quest given on page 119 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. What is an angle?

Q. How are angles measured and what real-life examples can you provide?

Q. Define Variable.

Q. What is the significance of variables in AI Connect?

Q. Describe the steps to turn a turtle in AI Connect.

Q. Explain the purpose of the functions block in AI Connect.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 119, 120 and 121 of the main course book as Exercise. Tell the students to solve Fun Zone activity given on page 121 of the main course book. Ask the students to answer the questions given as competency-based/ application-based questions on page 122 of the main course book. Help the students to solve these questions.

In creative assignment, activity like Lab Activity given on page 122 of the main course book will enhance the ability of the students and serve as computational thinking and critical thinking activities.

Suggested Activity

Ask the students to create a program in AI Connect to draw the following figures:

- Rectangle
- Circle

IMPRINT 1

11 Math Operators and Loops

Teaching Objectives

Students will learn about

- Math Operators
- Program to Evaluate 10+45
- Program to Evaluate (4+6) × (5+8)
- Loops
- Program to Print Multiplication Table of 7

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before Starting the Chapter ask the students to solve the question in Let's Recap given on page 123 of the main course book.

While teaching this chapter, tell the students about variable are used as empty boxes that we can name and assigning a value.

Introduce Math Operators to the students.

Tell the students about Math Block and uses of Math Blocks in AI connect.

Demonstrate the program to evaluate.

Introduce the topic of Loops and uses of loop blocks in AI connect.

Explain to the students, for loop, Range block, Repeat block, and Repeat while.

Demonstrate the program to print multiplication table of 7 in AI connect.

Ask the students to solve the exercise Quest given on page 127 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. Define Operators.

Q. Differentiate between round up and round down.

Q. What do you mean by term loop in AI Connect?

Q. What do you mean by Range block?

Q. Mention some uses of Math block in AI connect.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 128 and 129 of the main course book as Exercise. Tell the students to solve Fun Zone activity given on page 129 of

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the main course book. Ask the students to answer the questions given as competency-based/ application-based questions on page 130 of the main course book. Help the students to solve these questions.

In creative assignment, activity like Lab Activity given on page 130 of the main course book will enhance the ability of the students and serve as computational thinking and interdisciplinary learning activities.

Suggested Activity

Ask the students to create a program in AI Connect to print the table of 8.

12 AI in Real World

Teaching Objectives

Students will learn about

- ☞ Features of Robot
- ☞ How are Robots Programmed?
- ☞ Male and Female Detection
- ☞ Bird Detection r

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before Starting the Chapter ask the students to solve the question in LET'S RECAP given on page 131 of the main course book.

While teaching this chapter, tell the students about Artificial Intelligence and Robotics took the world to a new level and their significant role.

Introduce the students about robots and their features.

Tell the students about how are robots programmed?

Explain the following topics:

- If-do block
- '==' block
- Load Image block

Demonstrate the AI coding activity on the following:

- Male and Female detection
- Bird detection

Ask the students to solve the exercise Quest given on page 135 of the main course book.

Extension

Ask the students some oral questions based on this chapter.

Q. Tell anyone feature of robot.

Q. Name the category of if-do block in AI connect.

Q. Which category is present under AI learning category of block palette?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 135 and 136 of the main course book as Exercise. Tell the students to solve Fun Zone activity given on page 136 of the main course book. Ask the students to answer the questions given as competency-based/ application-based questions on page 136 of the main course book. Help the students to solve these questions.

In creative assignment, activity like Lab Activity given on page 137 of the main course book will enhance the ability of the students and serve as critical thinking and technology literacy activities.

Suggested Activity

Ask the students to create a program in AI Connect to detect a cat in an image.

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