5

C<>DEGPT

Ver. 4.0

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Periods / Days	0	I	II	III	IV	V	VI	VII	VIII
Monday									
Tuesday									
Wednesday					**B**				
Thursday					**R**				
Friday					**E**				
Saturday					**A**				
					K				

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.
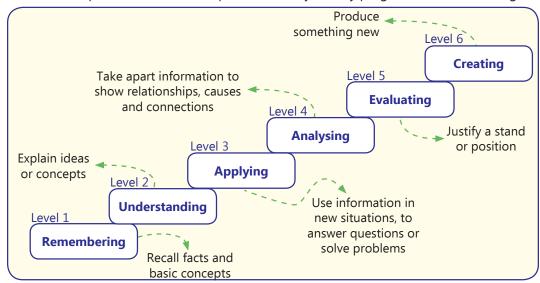
"Knowing yourself is the beginning of all wisdom."

Teaching Strategies

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

```
                    Direct
                  Instruction

  Performance                          Classroom
   Activities                          Discussion

                   Effective
   Student         Teaching            Small
   Research        Strategies       Group Work

      Problem                      Cooperative
      Solving                        Learning
```

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.

```
                                          Produce
                                      something new
                                                          Level 6
                                                           Creating

  Take apart information to               Level 5
  show relationships, causes
      and connections                    Evaluating
                              Level 4
                                                         Justify a stand
                               Analysing                  or position
                  Level 3
  Explain ideas
  or concepts       Applying
            Level 2
                                         Use information in
         Understanding                   new situations, to
   Level 1                               answer questions or
                                          solve problems
     Remembering

                     Recall facts and
                     basic concepts
```

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."

Lesson Plan

CodeGTP Ver. 4.0

1. Photo Editor & Video Editor

Teaching Objectives

Students will learn about

☞ Photos App

☞ OpenShot Video Editor

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 10 of the main course book.

While teaching this chapter, tell the students brief description of photo and video.

Introduce the students to Photos app.

Demonstrate to the students the steps to start Photos App and show the interface of it.

Demonstrate to the students the method of open, crop, flip and rotate a photo in Photos app.

Explain to the students that filters are the special effects that can change the appearance of a photo.

Demonstrate to the students how to apply filters to a photo.

Tell them that Photos app can also adjust brightness and contrast by using the Adjustments feature.

Demonstrate the steps to changing background, marking up, erasing objects in Photos app.

Introduce the students to OpenShot Video editor and explain its features.

Demonstrate the steps to start OpenShot Video Editor.

Show to the students the interface of OpenShot Video Editor window and familiarise them with its components.

Demonstrate the steps to import a video file for editing.

Explain to the students the process of arranging media files on the timeline.

Tell the students that the OpenShot transition effects are visual effects that appear when video plays from one video clip to another.

Demonstrate to the students the method of adding and removing transition effects to a video.

Ask the students to solve the exercises such as **Topic Flashback** given on page 13 and **Quick Quiz** given on page 19.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Photos app?

Q. Why do we need to import photos from our computer to Photos app?

Q. How is photo different from a video?

Q. Name some photo editing apps.

Q. What is the difference between brightness and contrast?

Q. What is the meaning of video editing?

Q. What is cropping/rotating/flipping?

Q. Which component of OpenShot Video Editor allows to layer videos and images?

Q. What are transition effects?

Q. What is a filter?

Q. What is trimming?

Q. Which feature of Photos app helps us to change the background of an image?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 20 and 21 in the main course book. Tell the students to try sections such as **Scratch Your Brain** given on page 21 and 22, and **SDG Activity** given on page 22 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explorer in the Lab** section on page 21 in the main course book. This will enhance the ability of the students and serve as a creativity and technology literacy activity.

Suggested Activity

Ask the students to prepare a word document on major differences between photo and video editing and take print out on an A4 sheet of paper.

2. Advanced Features of Word 2019

Teaching Objectives

Students will learn about

☞ Spelling and Grammar

☞ Find and Replace Text

☞ Column Formatting

☞ Mail Merge

☞ Thesaurus

☞ Page Formatting

☞ Paragraph Formatting

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 26 of the main course book.

While teaching this chapter, tell the students that formatting refers to the appearance of a document.

Introduce the students to Spelling and Grammar Check feature of Word.

Show to the students the representation of spelling and grammar mistakes with different colored wavy lines.

Demonstrate to the students the method of using Spelling and Grammar Check feature of Word.

Familiarise the students with the usefulness of Thesaurus feature to find synonyms of the selected word.

Tell the students that a particular word or phrase in a document can be looked for with the help of Find feature.

Tell them that Word can go one step ahead and can replace that particular word or phrase by another word or phrase as required by the user using the Replace feature.

Demonstrate the steps to use Find and Replace features.

Explain to the students that Page formatting is the arrangement of text and all the elements on a page.

Introduce to the students the concept of orientation as the side of the paper along which the content of the document will be printed.

Tell the students about different types of orientations.

Show to them the steps involved in changing the page orientation in a document.

Demonstrate the steps to set paper size of a document and inserting a page break.

Tell the students that Word has an option to view text or the entire document in columns.

Demonstrate the steps to view the text in columns.

Explain to the students that line spacing means the blank space between two lines in a paragraph.

Further tell them that the paragraph spacing means the blank space between two consecutive paragraphs in a document.

Introduce to the students Mail Merge as the feature used to create personalised letters to be sent to many persons.

Tell them the various steps involved in creating a mail merge.

Ask the students to solve the exercises such as **Topic Flashback** given on page 29 and **Quick Quiz** given on page 35. Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Spelling and Grammar check feature?

Q. Which button is pressed to skip errors and continue working during Spelling and Grammar check?

Q. What is the difference between Find and Replace features?

Q. What is the meaning of Line Spacing?

Q. What is the meaning of Paragraph Spacing?

Q. What do you mean by page orientation?

Q. What do you mean by Mail Merge?

Q. How is Mail Merge helpful?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 36, 37 and 38 in the main course book. Tell the students to try sections such as **Scratch Your Brain** given on page 38 and **SDG Activity** given on page 39 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 39 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** and **Experiential Learning** given on pages 29 and 35 in the computer lab.

Suggested Activity

Ask the students to create an electronic invitation (personalised) for inviting middle school teachers to a thank you performance organised by Grade 6-8 students.

3. More on PowerPoint 2019

Teaching Objectives

Students will learn about

☞   Slide Transition

☞   Animation

☞   Inserting Audio and Video Files

☞   Printing the Presentation

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 41 of the main course book.

While teaching this chapter, tell the students that slide transition determines how your presentation moves from one slide to the next.

Let them know that PowerPoint provides several transition effects.

Introduce the students to the concept of animation.

Make the students aware of the categories of the animation effects in PowerPoint 2019.

Let them know that PowerPoint allows us to add or modify timings of the animation effect. Also let them know the steps to add timings of the animation effects.

Explain how audio and video files are inserted in PowerPoint 2019.

Demonstrate the steps to insert the audio and video files from different sources.

Also let them know the steps to print the presentation.

Ask the students to solve the exercises such as **Topic Flashback** given on page 49 and **Quick Quiz** given on page 50.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is slide transition?

Q. What is animation?

Q. How many categories of the animation effects are there in PowerPoint 2019?

Q. How can timing of the animation effects be modified?

Q. How can an animation in PowerPoint 2019 be removed?

Q. How is an audio file inserted in PowerPoint 2019?

Q. How can an online video be inserted in PowerPoint 2019?

Q. What is the method of printing the presentation in PowerPoint 2019?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 50, 51 and 52 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **SDG Activity** given on pages 52 and 53 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 53 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** and **Art Integration Learning** given on page 49 in the computer lab.

Suggested Activity

Ask the students to insert an online video on the topic 'India: An Emerging Leader of the World' and show it to him/her.

4. Introduction to Excel 2019

Teaching Objectives

Students will learn about

- ☞ Excel 2019
- ☞ Components of Excel 2019 Window
- ☞ Creating a New Workbook
- ☞ Adding/Removing/Renaming a Worksheet
- ☞ Closing a Workbook
- ☞ Starting Excel
- ☞ Changing the Active Cell
- ☞ Entering Data
- ☞ Saving/Opening a Workbook

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 56 of the main course book.

While teaching this chapter, tell the students that MS Excel is an application software that helps us store and analyse data.

Let the students know that Excel is also known as an electronic spreadsheet.

Explain several features of Excel 2019.

Make them understand how to start Excel 2019.

Familiarise the students with the various components of MS Excel 2019 window.

Explain to the students how to change the active cell.

Let them know how to create a workbook.

Make them aware of entering data in a worksheet.

Demonstrate the steps of adding/removing/renaming a worksheet to the students.

Explain how a workbook is saved or opened in Excel 2019.

Finally make them learn to close a workbook in Excel 2019.

Ask the students to solve the exercises such as **Topic Flashback** given on page 59 and **Quick Quiz** given on page 63.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

- Q. What is Excel 2019?
- Q. What are the features of Excel 2019?
- Q. Name any five components of Excel 2019.
- Q. Define Formula Bar / Sheet Tab / Row / Column / Cell / Active Cell / Worksheet.
- Q. What are Enter, Insert and Cancel buttons 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 63 and 64 in the main course book. Tell the students to try sections such as **Scratch Your Brain** given on page 65 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 65 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Art Integration Learning** given on page 60 and **Interdisciplinary Learning** given on page 62 in the computer lab.

Suggested Activity

Ask the students to design their class time-table in Excel 2019.

5. Editing Cell Contents in Excel 2019

Teaching Objectives

Students will learn about

☞   Selecting Cells

☞   Changing Cell Contents

☞   Copying and Moving Data

☞   Using AutoFill Feature

☞   Entering Date and Time

☞   Undo and Redo Commands

☞   Deleting Cell Contents

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 67 of the main course book.

Begin with description of cells and their address in Excel 2019.

Let them know how to select a cell, row, column, a range of cells, multiple cells, or the whole worksheet in Excel 2019.

Make the students aware of how to enter date and time in Excel 2019.

Explain to the students how cell contents can be changed in Excel 2019.

Tell the students where Undo and Redo commands are found in Excel 2019 and how they are used.

Explain to the students that copying and moving data in Excel 2019 is similar to the copy and move command in Word 2019.

Let the students know how cell contents can be deleted in Excel 2019.

Let the students know that the AutoFill feature in Excel 2019 is used to automatically fill a series of data in rows and columns based on the values of other cells.

Also teach them the steps to use the AutoFill feature.

Ask the students to solve the exercises such as **Topic Flashback** given on page 70 and **Quick Quiz** given on page 74.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is to be selected to edit any content in Excel 2019?

Q. What does the Excel 2019 look for when time is entered?

Q. What is Redo command used for?

Q. Define Undo command.

Q. Which key is selected to delete the contents of a cell in Excel 2019?

Q. What is the use of AutoFill feature?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 74, 75 and 76 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **SDG Activity** given on pages 76 and 77 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 77 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** given on page 71 and **Art Integration Learning** given on page 73 in the computer lab.

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

6. Internet and E-mail

Teaching Objectives

Students will learn about

☞ Internet

☞ Using Web Browser

☞ E-mail

☞ Types of Internet Connection

☞ Using URLs

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 82 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.

Make the students aware of the types of Internet connection like Dial-up, Broadband, Wi-Fi, Mobile Internet and Hotspots.

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.

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

Share with the students the advantages of an 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
- Signing in to an e-mail account
- 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
- Signing out from the e-mail account (tell them the importance of this step)

Ask the students to solve the exercises such as **Topic Flashback** given on page 84 and **Quick Quiz** given on page 89.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q.   What is Internet?

Q.   Name the different types of Internet connections.

Q.   Define hotspots.

Q.   What is a web browser?

Q.   What is a URL?

Q.   What is an e-mail?

Q.   What are the advantages of an e-mail?

Q.   What is an e-mail address?

Q.   What do you mean by CC in a mail?

Q.   Define BCC.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 90 and 91 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **SDG Activity** given on page 92 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 92 in the main course book. This will enhance the ability of the students and foster Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** given on page 84 and **Experiential Learning** given on page 89 in the computer lab.

Suggested Activity

Ask the students to create an e-mail account. Tell them to design a birthday invitation card in Paint program and send this card as an attachment to ten friends or relatives.

7. Safeguarding Your Computer

Teaching Objectives

Students will learn about

☞   Computer Malware

☞   The most Dangerous Malwares Known

☞   Harms Caused by Computer Malwares

☞   How Does a Computer Get Infected?

☞   Symptoms of an Infected Computer

☞   How to Protect Your Computer

☞   Antivirus

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 94 of the main course book.

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

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.

Explain the different ways a computer can become infected.

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

Make them understand how one can protect his/her 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 exercises such as **Topic Flashback** given on page 97 and **Quick Quiz** given on page 98.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q.   Can computer also fall sick?

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 98, 99 and 100 in the main course book. Tell the students to try sections such as **Scratch Your Brain** given on page 100 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section given on page 100 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** given on page 97 and **Experiential Learning** given on page 98 at home and show it to the class the next day.

Suggested Activity

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

8. Data Processing

Teaching Objectives

Students will learn about

☞   Data and Information

☞   Sorting Data

☞   Representing Information

☞   Decoding

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 103 of the main course book.

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

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

Tell the students about how to represent information with the help of tables, pictures, maps and pictograms.

Let them know how to sort data by giving some examples which will improve their understanding of the topic.

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 exercises such as **Topic Flashback** and **Quick Quiz** given on page 106.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

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 a decoding?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 106 and 107 in the main course book. Tell the students to try sections such as **Scratch Your Brain** given on page 107 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 107 in the main course book. This will enhance the ability of the students and foster Critical Thinking and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** given on page 104 and **Experiential Learning** given on page 105 at home and show it to the class the next day.

Suggested Activity

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

9. More On Scratch

Teaching Objectives

Students will learn about

- ☞ Operators
- ☞ Variables
- ☞ Loops

- ☞ Sensing Blocks
- ☞ Conditional Blocks
- ☞ Creating a Game

Number of Periods	
Theory	Practical
3	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 109 of the main course book.

Begin with introduction of Scratch and move on to tell about various blocks in Scratch.

Let them know that Operators blocks in Scratch are colour-coded as light-green, and are used to do arithmetic, relational and logical calculations.

Make the students aware of Sensing blocks in Scratch and how they work.

Let them know that how sensing blocks sense an input through an example.

Explain to the students what are variables and how variables can be created in Scratch.

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

Let the students know that the automatic running of a set of instructions more than once is called looping.

Tell the students about the blocks related to looping.

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

Ask the students to solve the exercises such as **Topic Flashback** given on page 112 and **Quick Quiz** given on page 117.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

- Q. What is Scratch?
- Q. What are operators?
- Q. Explain different operators.
- Q. What are sensing blocks?
- Q. What is a variable?
- Q. What is a script?
- Q. Which sensing block prompts the user to type the input using the keyboard?
- Q. Which sensing block checks if the chosen key is pressed by the user?
- Q. What are conditional blocks?
- Q. Define looping.
- Q. Which looping block is used to run a set of instructions for a specified number of times?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 117, 118 and 119 in the main course book. Tell the students to try sections such as **Scratch Your Brain** given on page 119 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 120 in the main course book. This will enhance the ability of the students and foster Critical Thinking and Technology Literacy skills.

Ask the students to complete the elements like **Experiential Learning** given on page 110 and show it to the class the next day.

Suggested Activity

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

10. Robotics

Teaching Objectives

Students will learn about

☞ What Are Robots?

☞ Fields Where Robots Are Used

☞ Latest Robots

Number of Periods	
Theory	Practical
3	**0**

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 122 of the main course book.

Let the students know that robots are automatically operated machines that work in place of humans.

Explain that Robotics is a branch of engineering and science that deals with the design, construction and functioning of robots.

Make the students aware of the fields where robots are used like security and surveillance, manufacturing, customer service, cooking, healthcare, space exploration, entertainment and underwater research.

Make the students aware of latest robots like T-HR3, Sophia, Digit, RoboThespian, Nao, Z-Machines, Moley Robotic Kitchen, Paro, Root, Zenbo and Dash & Dot.

Ask the students to solve the exercises such as **Topic Flashback** given on page 124 and **Quick Quiz** given on page 127.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What are robots?

Q. Define Robotics.

Q. Name some fields where robots are used.

Q. Which was the first robot to join the assembly line in 1961?

Q. Which robot can recognise people from the database of their previous visits?

Q. What is Sophia?

Q. What is RoboThespian?

Q. What does the robot Nao do?

Q. What is Paro, a talking robot used for?

Q. What is Zenbo?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 128 and 129 in the main course book. Tell the students to try sections such as **Scratch Your Brain**, and **SDG Activity** given on pages 129 and 130 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 130 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Art Integration Learning**, **Experiential Learning** and **Interdisciplinary Learning** given on pages 124 and 127 and show it to the class next day.

Suggested Activity

Ask the students to gather more information about the latest robots and the areas of their use.