TOUCHPAD

PLus Ver. 4.0

4

Teacher's Manual

Extended Support for Teachers

ORANGE
www.orangeeducation.in

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."

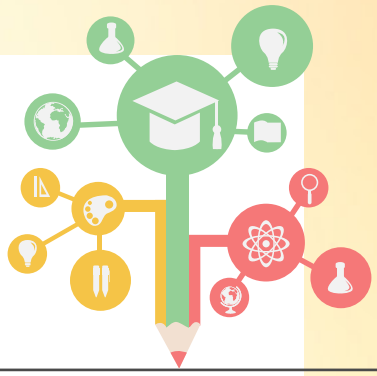
Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/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

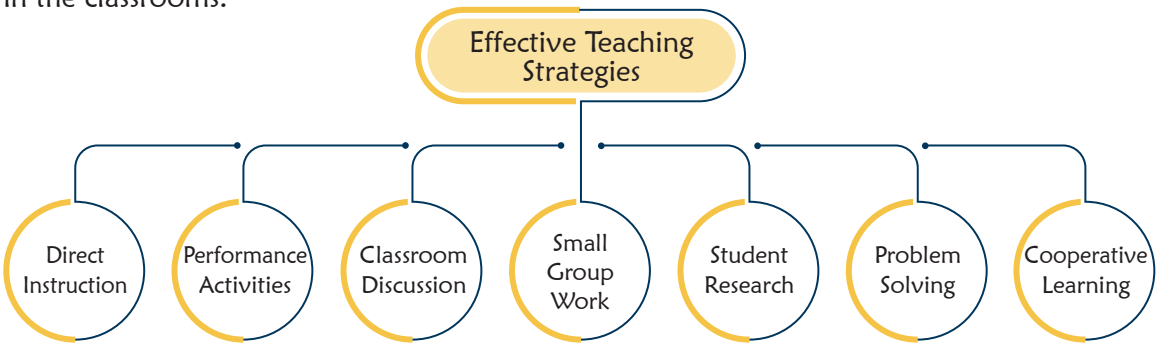
After the class

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

"Knowing yourself is the beginning of all wisdom."

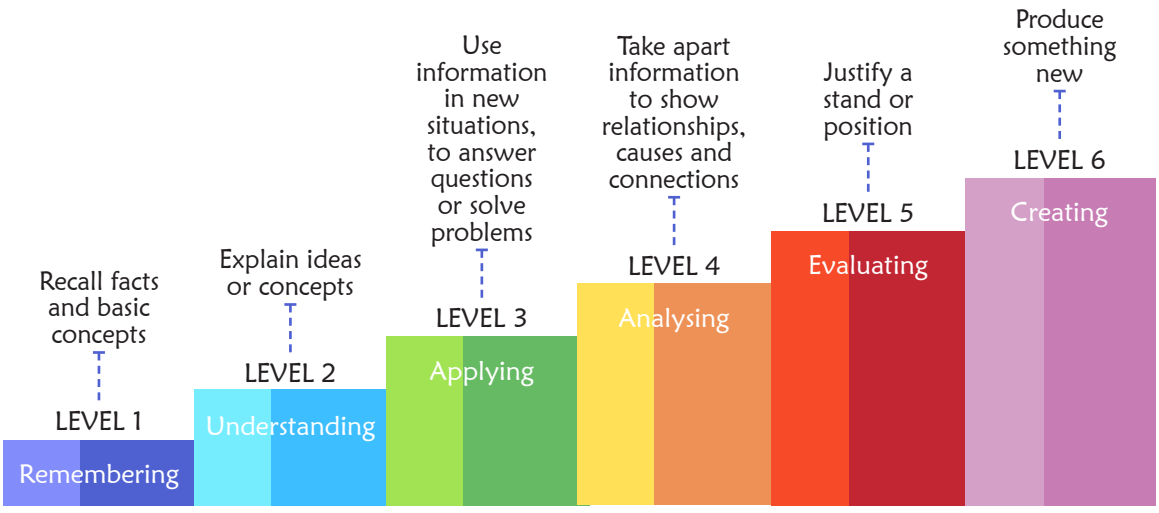
Teaching Strategies

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 4

LESSON PLAN

PLUS Ver. 4.0

1. Data Storage and Memory

Teaching Objectives

Students will learn about

- ☞ Memory
- ☞ Measuring the computer's memory

Number of Periods	
Theory	Practical
1	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 11 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.

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

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) (See Suggested Activity also)

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 and YB.

Ask the students to solve the exercise 'Double Tap' given on page 13.

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 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. What are the different types of CDs and DVDs?
Q. Expand CD / DVD.
Q. What is a pen drive / 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 14 and 15 in the main course book. Tell the students to try questions under Scratch your Brain given on pages 15 and 16 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 16 in the main course book. This will enhance the ability of the students and serve as a communication and technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 14 in the computer lab.

Suggested Activity

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

2. Managing Files and Folders in Windows 10

Teaching Objectives

Students will learn about

- Windows 10 Desktop
- Files and Folders

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 18 of the main course book.

While teaching this chapter, tell the students that Windows is a GUI based operating system developed by Microsoft.

Make the students recall desktop as the first screen on which they can work.

Familiarize the students with the components of Windows 10 desktop covering Start button, Icons, Taskbar, and Desktop background.

Explain briefly about each of these components of Windows 10.

Share with the students the usefulness of This PC icon.

Tell the students about the Live Tiles and Taskbar.

Demonstrate the steps to add, resize and remove tile.

Tell the students about File and Folder.

Demonstrate to the students the steps to:

- Selecting a file/folder.
- Renaming a file/folder.
- Moving a file/folder.
- Creating a file/folder.
- Copying a file/folder.
- Deleting a file/folder.

Tell the students about Recycle Bin and its use.

Ask the students to solve the exercise 'Double Tap' given on page 22.

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 Windows 10?

Q. Name the components of Windows 10 desktop.

Q. What are icons?

Q. In how many parts is the Start menu divided?

Q. What are Live Tiles?

Q. What is a file?

Q. What is a folder?

Q. What is Recycle Bin?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 27 and 28 in the main course book. Tell the students to try questions under 'Scratch Your Brain' given on pages 28 and 29 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 29 in the main course book. This will enhance the ability of the students and serve as a creativity and information literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 26 in the computer lab.

Suggested Activity

Ask the students to prepare a note on any one Gadget provided by Windows 10 on an A4 sheet of paper.

3. More on Word 2019

Teaching Objectives

Students will learn about

- Shapes
- Pictures
- Inserting Rows or Columns
- Merging Cells
- Changing Row Height & Column Width
- WordArt
- Inserting a Table
- Deleting Rows or Columns
- Splitting a Cell
- Changing the Text Alignment

Number of Periods	
Theory	Practical
3	4

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 31 of the main course book.

While teaching this chapter, tell the students that although MS Word is a word processor, yet it allows three types of graphics to work upon – Shapes, WordArt and Pictures.

Familiarize the students with various categories of Shapes under Illustrations group of Home tab explaining use of Lines, Basic Shapes, Flowchart, Stars and Banners and Callouts.

Demonstrate to the students the steps involved in the process of:

- drawing a shape.
- adding text to the shape.

Tell the students the various types of modifications that can be done on the inserted shape – changing outline color, changing fill colour, adding shape effects like 3-D rotation and bevel.

Introduce WordArt as application to create text effects which are not possible through text formatting.

Demonstrate to the students the steps to:

- insert WordArt in a document.
- insert Pictures.

While teaching this chapter, tell the students that a table is an arrangement of text in the form of columns and rows.

Also tell them that an intersection of a row and a column is called a cell.

Demonstrate to the students the method of inserting a table in a Word document.

Show to the students how to select a cell, a group of cells, a row, a column or the whole table.

Demonstrate to the students the steps to:

- add more rows to a table.
- add more columns to a table.
- change width of a column and height of row.
- delete rows from a table.
- delete columns from a table.

Introduce merging of cells as combining two or more cells in the same row or the same column into a single cell.

Show to the students the steps to merge two or more cells. Introduce splitting of cells as dividing one cell into two or more cells. Show to the students the steps to split a cell.

Demonstrate to the students the steps to move a table and resize a table.

Tell the students that Word 2019 allows to apply borders to tables and cells as well as to shade the cells and table.

Make the students understand that Word offers some built-in formats as Table Styles to apply to a table.

Ask the students to solve the exercise 'Double Tap' given on page 38.

Extension

Ask the students some oral questions based on this chapter.

Q. Name any three categories of Shapes in Word 2019.

Q. What do you mean by formatting a shape?

Q. What does Add Text option do?

Q. What is a table?

Q. Define a cell.

Q. What is the shape of the mouse pointer while selecting a cell / row / column / table?

Q. Can more rows or columns be added to a table?

Q. Define merging / splitting of cells.

Q. What is the difference between moving a table and resizing a table?

Q. What is the use of Table Styles feature of Word 2019?

Q. Write the steps to change the text alignment.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 41 and 42 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 42 and 43 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 43 in the main course book. This will enhance the ability of the students and serve as a creativity and information literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 35 in the computer lab and 'Experiential learning' given on page 39, at home and show it to him/her the next day.

Suggested Activity

1. Ask the students to write a paragraph in in Word 2019 on 'Festivals of India'. The paragraph must be supported with relevant pictures.
2. Ask the students to create a comparative marksheet for your marks in different subjects for last three classes.

4. Introduction to PowerPoint 2019

Teaching Objectives

Students will learn about

- ☞ Starting Powerpoint
- ☞ Creating a New Presentation
- ☞ Slide Layout
- ☞ Applying Themes
- ☞ Inserting SmartArt
- ☞ Components of the Powerpoint Window
- ☞ Formatting the Text on the Slide
- ☞ Viewing a Presentation
- ☞ Changing the Background

Number of Periods	
Theory	Practical
3	4

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 46 of the main course book.

While teaching this chapter, tell the students that PowerPoint 2019 is a part of Microsoft Office 2019 package or suite.

Share with the students that it is used to create presentations.

Demonstrate to the students the steps to start PowerPoint 2019.

Familiarize the students with various components of PowerPoint screen covering Title Bar, Ribbon, Quick Access Toolbar, File Tab, Slide, Placeholder, Slides / Outline Pane and Status Bar.

Introduce slide as a single page of a presentation.

Demonstrate the steps to:

- create a new presentation.
- enter data on a slide in title and subtitle placeholders.
- add new slide to a presentation.

While teaching this chapter, tell the students that PowerPoint is a program that allows creating interesting and exciting presentations through formatting.

Introduce slide layout as arrangement of text, image, Charts, etc. on a particular slide.

Share with the students the names of some commonly used slide layout options.

Demonstrate to the students the steps involved in changing the slide layout.

Let the students know how to view a presentation in PowerPoint 2019.

Explain to the students the names of different types of slide views in MS PowerPoint 2019 covering Normal View, Outline View, Slide Sorter View and Reading View.

Explain to the students that themes are an in-built feature which offer you a quick way of changing the layout and background design of the presentation.

Make the students aware of applying themes in PowerPoint 2019.

Make them understand how to change background in PowerPoint 2019.

Introduce SmartArt as a diagrammatic representation of some information. Tell the students about different types of SmartArt diagrams and the situations when each of them is used.

Ask the students to solve the exercise 'Double Tap' given on page 55.

Extension

Ask the students some oral questions based on this chapter.

Q. What is PowerPoint 2019?

Q. Define Title Bar / Status Bar.

Q. What do you mean by Ribbon / Placeholder?

Q. What is a slide in a presentation?

Q. Define slide layout.

Q. What are the various ways in which a slide show can be started?

Q. What are the steps to exit PowerPoint 2019?

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

Q. What are themes?

Q. Write the steps to change the background.

Q. Define SmartArt.

Q. When is Normal / Outline / Slide Sorter / Reading View used?

Q. What is the use of SmartArt?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 57, 58 and 59 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 59 and 60 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 60 in the main course book. This will enhance the ability of the students and serve as a productivity & accountability and information literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 54 and 'Art Integration Learning' given on page 57 in the computer lab.

Suggested Activity

Ask the students to create a presentation on 'The Cartoon Character I Like The Most'.

5. Using a Browser

Teaching Objectives

Students will learn about

- ☞ What is Internet?
- ☞ Searching on Internet
- ☞ Microsoft Edge
- ☞ Downloading and Uploading on Internet

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 62 of the main course book.

While teaching this chapter, make the students recall about Internet and explain the brief history of Internet.

Tell the students the basic common Internet terms:

- World Wide Web
- Website
- Web Browser
- Web Page
- URL
- Home Page

Tell the students about the Microsoft Edge and parts of Edge.

Show the students the steps involved in using the search engines.

Make the students aware of the process of downloading and uploading on the Internet.

Ask the students to solve the exercise 'Double Tap' given on page 64.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Internet?
Q. What is Microsoft Edge?
Q. Name different parts of Microsoft Edge window.
Q. What is search engine?
Q. Name some popular search engines.
Q. What do you understand by Downloading / Uploading data?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 67 and 68 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', 'Go Online' and 'A better Me' given on pages 68 and 69 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 69 in the main course book. This will enhance the ability of the students and serve as a flexibility and media literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' and 'Art Integration Learning' given on page 66 in the computer lab.

Suggested Activity

Ask the students to paste a picture of Microsoft Edge in their computer notebook / practical file and label its components and tools discussed in the chapter.

6. Visual Processing

Teaching Objectives

Students will learn about

- ☞ Picture Puzzle
- ☞ Directions and Maps

Number of Periods	
Theory	Practical
1	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 76 of the main course book.

Introduce Picture Puzzle to the students in details with the help of proper examples for better understanding.

Tell the students about a puzzle. Also, tell them how to solve the puzzle by giving some examples which will improve their understanding of the topic.

Tell the types of picture puzzle to the students which are:

- Odd One Out
- Mirror Images

Show the students what is direction and how to identify it with the help of analysis.

Explain the meaning of maps to the students and tell them how to use them with the help of directions.

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

Ask the students to solve the exercise 'Double Tap' given on page 79.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a puzzle?

Q. What is a picture puzzle?

Q. How many types of picture puzzle are there?

Q. What is a direction?

Q. What is a map?

Evaluation

After explaining the chapter, let the students do the exercises given on page 80 in the main course book as Test Your Skills. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 80 and 81 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 81 in the main course book. This will enhance the ability of the students and serve as a creativity and information literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 77 and 'Art Integration Learning' given on page 78 at home and show it him/her the next day.

Suggested Activity

Ask the students to practise to find out more types of picture puzzles.

7. More Blocks in Scratch

Teaching Objectives

Students will learn about

- ☞ Components of Scratch Window
- ☞ Setting the Sprite Position
- ☞ Block Categories
- ☞ Creating a Scratch Project

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 83 of the main course book.

Tell the students to recall about Scratch and revise the components of Scratch window components.

Explain the Block categories and its types using appropriate examples:

- Motion blocks
- Looks blocks
- Sound blocks
- Control blocks

Show the students how to change the sprite position with suitable example.

Let the students know that a script is another name for a program.

Also make the students understand how to create Scratch project.

Ask the students to solve the exercise 'Double Tap' given on page 85.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. Name some components of Scratch window.

Q. What are blocks?

Q. What is motion block?

Q. What is looks block?

Q. What is sound block?

Q. What is control block?

Q. How can we set the position of the sprite?

Q. Which block helps us fix the position of the sprite at the beginning of a sprite?

Q. What is a script?

Q. How can a script be created in Scratch? Give some examples.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 88 and 89 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 89 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 90 in the main course book. This will enhance the ability of the students and serve as a creativity and information literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 85, and 'Art Integration Learning' given on page 87 in the computer lab.

Suggested Activity

Ask the students to create a program in Scratch to move sprite 360 degree and reverse to its original position.

8. Creating Shapes in Scratch

Teaching Objectives

Students will learn about

- Pen Block
- Drawing a Square in Scratch
- Drawing Polygons in Scratch

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 92 of the main course book.

Tell the students about pen block and explain its use by using appropriate examples. Also, show the steps involved in creating programs using pen blocks.

Let the students know that Polygons are 2D shapes with three or more straight lines.

Tell the steps involved in drawing polygons in Scratch.

Explain the steps involved in drawing a square in Scratch.

Ask the students to solve the exercise 'Double Tap' given on page 94.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a pen block?
Q. Name some pen blocks.
Q. What is the function of a stamp block?
Q. What are polygons?
Q. How can you draw a polygon in Scratch?
Q. How can the degree of the angle at the corner of the polygon be calculated?
Q. How can you draw a square in Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 95 and 96 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 96 and 97 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 97 in the main course book. This will enhance the ability of the students and serve as a creativity and technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 95 in the computer lab.

Suggested Activity

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

9. Google Blockly Games

Teaching Objectives

Students will learn about

- ☞ Bird Game
- ☞ Turtle Game

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 100 of the main course book.

Begin with the description of Bird game.

Explain to the the students that Bird game teaches us the concept of rotation by an angle.

Make the students aware of the blocks and their uses before they play the Bird game.

Let the students know how to play Bird game.

Make the students aware of Turtle game.

Tell the students that the Turtle game teaches the user the concept of drawing by moving the pen (in the form of Turtle) across the drawing board.

Explain to the students that this game has 10 levels.

Make the students learn the steps to play the Turtle game.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Bird game?

Q. name the blocks used in Bird game.

Q. Write the uses of the blocks used in Bird game.

Q. Write the steps to start Bird game.

Q. What does Turtle game teach the user?

Q. How many levels does the Turtle game have?

Q. How does difficulty increase in Turtle game?

Q. How many blocks does the Turtle category have?

Q. Which block does the Loops category have?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 104 and 105 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on page 106 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 106 in the main course book. This will enhance the ability of the students and serve as a flexibility and technology literacy activity.

Suggested Activity

Ask the students to find more about Blockly games and make a collage of them.

10. Evolution of AI

Teaching Objectives

Students will learn about

- 1950s
- 1960s
- 1970s
- 2000s
- 2000s to Present

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 108 of the main course book.

While teaching this chapter, make sure that the students are well aware of AI and related topics taught in previous classes.

Tell the students about AI around us and its purpose in real life.

Explain the evolution of AI to the students along with its details:

- 1950s
- 1960s
- 1970s
- 2000s
- 2000s to Present

Define the inventions of all these years along with their inventor to the students and how it changes our lives.

Relate all these to their day-to-day routine.

Ask the students to solve the exercise 'Double Tap' given on page 111.

Extension

Ask the students some oral questions based on this chapter.

Q. What is AI?

Q. Who was Alan Turing?

Q. Who is known as the father of AI?

Q. Name the first chatbot. When was it create?

Q. What were the major achievements of 1970s in terms of AI?

Q. What is ASIMO?

Q. Which era is termed as a revolution in the field of AI?

Q. Write a note on Google Home.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 113 and 114 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 114 and 115 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 115 in the main course book. This will enhance the ability of the students and serve as a flexibility and information literacy activity.

Suggested Activity

Ask the students to practise more in Mystery Animal and search similar games.