

TOUCHPAD

Play Ver. 2.1

4

TEACHER'S MANUAL

Extended Support for Teachers



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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



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.

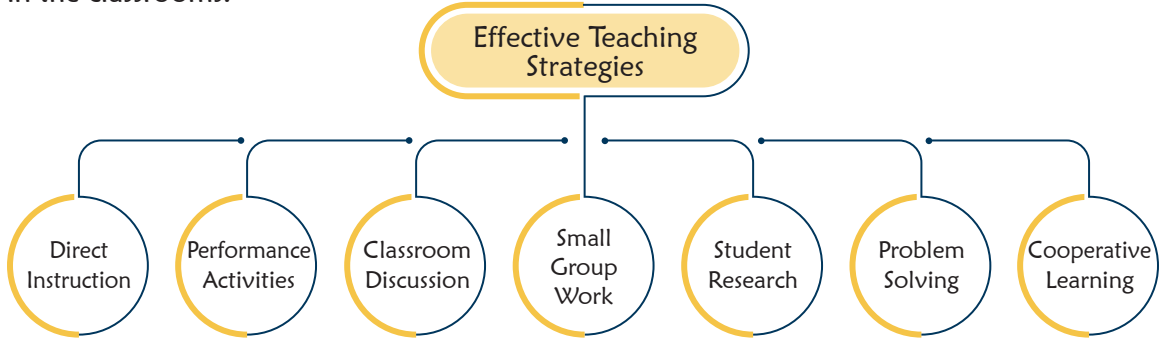
After the class

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

“Knowing yourself is the beginning of all wisdom.”

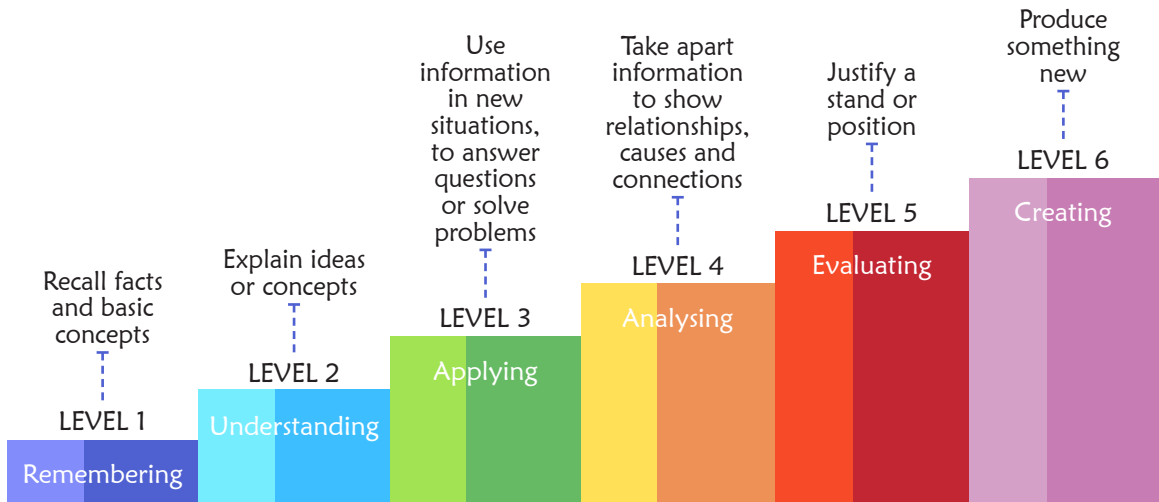
Teaching Strategies

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. ”

1 The Computer—An Overview

Teaching Objectives

Students will learn about:

- ✦ Working of a Computer
- ✦ Processing Device
- ✦ Input Devices
- ✦ Output Devices

Number of Periods

Theory

Practical

2

2

Teaching Plan

While teaching this chapter, tell the students that a computer system is made up of two types of parts—Hardware and Software.

Tell the students about the working of computer.

Share with the students that computer receives input from the user through input devices, processes the input using the CPU and gives back the output using output devices.

Share with the students that this cycle of working of machines is called Input-Process-Output cycle or IPO cycle.

Introduce the term Input as giving instructions to the computer.

Tell the students that keyboard, mouse, scanner, webcam, graphic tablet, joystick and microphone are used as input devices in a computer.

Introduce the term Process as action performed by computer on the instructions given by us.

Tell the students that Central Processing Unit (CPU) is processing device of a computer and is called brain of the computer.

Let the students know that ALU, CU and Memory Unit are the three main components of CPU.

Introduce the term Output as result given by the computer after processing.

Tell the students that monitor, printer and plotters are used as output devices in a computer.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What does IPO stand for?

Q. What is Input-Process-Output cycle?

Q. Name two input and output devices.

Q. Which part of the CPU performs mathematical and logical operations?

Q. What are plotters?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 12 and 13 of the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 13 of the main course book. It will enhance the ability of the students and will serve as a Collaboration and Technology Literacy activity.

Suggested Activity

Show some more machines with input and output to the students and ask the students to arrange these in correct order of the IPO cycle.

2 Personalizing Windows 10

Teaching Objectives

Students will learn about:

- ✦ Getting Started with Windows 10
- ✦ File/Folder
- ✦ Creating a New File
- ✦ Shortcut Menu
- ✦ Using the This PC Icon
- ✦ Creating a New Folder
- ✦ Selecting a File/Folder

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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.

Familiarise the students with the components of Windows 10 desktop covering 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.

Make the students aware of File and Folder.

Demonstrate to the students the steps to:

- Create a new folder
- Select a file/folder
- Create a new file

Tell the students about Shortcut menu.

Ensure that the scope of **Teacher's Corner** 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. Define Desktop Background.
- Q. What are icons?
- Q. What is the use of This PC icon?
- Q. What is a file?
- Q. What is a folder?
- Q. How does shortcut menu help us?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 18 and 19 of the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 19 of the main course book. It will enhance the ability of the students and will serve as a Critical Thinking and Technology Literacy activity.

Suggested Activity

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

3

Formatting in Word 2016

Teaching Objectives

Students will learn about:

- ✦ Changing Font, Font Size and Font Color
- ✦ Bold, Italic and Underline
- ✦ Format Painter
- ✦ Applying Border and Shading
- ✦ Find and Replace
- ✦ Applying Drop Cap Effect
- ✦ Highlighting Text
- ✦ Applying Text Effects
- ✦ Changing Alignment
- ✦ Changing Case
- ✦ Adding Bullets and Numbering

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that formatting the text means changing the appearance and arrangement of the text.

Share with the students the default font and font size in a Word 2016 document.

Demonstrate to the students the steps of changing font size and font color.

Introduce highlighting feature of Word as marking important text and placing a coloured rectangle over it.

Show to the students the steps involved in highlighting text.

Share with the students about the Bold, Italic and Underline features and the method of applying these features to the text.

Tell the students that Word has some in-built text styles which can be applied to the selected text.

Demonstrate to the students the steps of:

- Applying text effects
- Changing alignment
- Format Painter
- Applying borders and shading

Introduce Change Case feature as changing text to upper, lower and other common capitalizations.

Show the students how to change case of the selected text.

Introduce Find and Replace as to find whether a particular word or phrase appears in a document or not.

Demonstrate to the students the steps to find or replace a word or phrase.

Introduce bullets as small symbol used to mark items in a list.

Show to the students the method of adding bullets or numbers to the items in a list.

Let the students know that when the first letter of the first word of a paragraph is bigger than the rest of the text then it is called Drop Cap effect.

Demonstrate to the students the steps to apply Drop Cap effect.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

- Q. Define formatting a text.
- Q. What is the default font/font size of text in a MS Word 2016 document?
- Q. What do you mean by highlighting text?
- Q. What is the difference between bold and italic format of the text?
- Q. What are text effects?
- Q. What is Drop Cap effect?
- Q. Define text alignment.
- Q. What are the different types of text alignment options?
- Q. Why is shading added to text?
- Q. What does Change Case option do?
- Q. What are bullets?
- Q. When are bullets or numbers added to text?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 27 and 28 of the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 28 of the main course book. It will enhance the ability of the students and will serve as Technology Literacy and Productivity & Accountability activity.

Suggested Activity

Ask the students to write a paragraph on My Favourite Sport in MS Word 2016 applying various formatting features to make the paragraph attractive.

4

Graphics and Tables in Word 2016

Teaching Objectives

Students will learn about:

- ✦ Shapes
- ✦ Symbols
- ✦ Working with Tables
- ✦ WordArt
- ✦ Table

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that Word 2016 is a word processor, it offers enhanced features to create attractive documents with a professional look.

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

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

- Drawing a shape
- Inserting text

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 Symbols (punctuations or special characters not found on keyboard)

Tell the students that a table is an arrangement of text in the form of columns and rows.

Also tell them that the individual squares in which the text, images or graphics is placed 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 Rows or Columns
- Deleting Cells, Rows, Columns and Table
- Changing Column Width

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 resize a table.

Tell the students that Word 2016 allows to apply borders to tables and cells as well as to shade the cells and table.

Make the students understand that Word 2016 offers some built-in formats as Table Styles to apply to a table.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Name any three categories of Shapes in MS Word 2016.

Q. How can you insert a shape?

Q. What does Add Text option do?

Q. What is WordArt?

Q. Define Symbols.

Q. What is a table?

Q. Define a cell.

Q. How can you insert a table?

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

Q. Define merging / splitting of cells.

Q. What do you mean by resizing a table?

Q. What is the use of Table Styles feature of Word 2016?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 36 and 37 of the main course book as **Exercise**.

In Creative Assignment, activity **IN THE LAB** given on Page 37 of the main course book will enhance the ability of the students and serve as a Technology Literacy and Flexibility activity.

Suggested Activity

Ask the students to write a paragraph in Word 2016 on 'Festivals of India'. The paragraph must be supported with relevant pictures.

Teaching Objectives

Students will learn about:

- ✦ Starting Powerpoint 2016
- ✦ Creating a New Presentation
- ✦ Using Built-in Templates
- ✦ Saving a Presentation
- ✦ Components of the Powerpoint Window
- ✦ Entering Data on the Slide
- ✦ Slide Views
- ✦ Opening a Saved Presentation

Number of Periods	
Theory	Practical
3	4

Teaching Plan

Tell the students that PowerPoint 2016 is a part of Microsoft Office package or suite.

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

Demonstrate to the students the steps to start PowerPoint 2016.

Familiarise 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.
- view a slideshow.

Tell the students that PowerPoint is a program that allows creating interesting and exciting presentations through formatting.

Introduce Built-in templates as group of slides with predefined layouts, colors, fonts and themes.

Demonstrate to the students the steps to use templates.

Let the students know how the slides and their contents appear on the screen.

Explain to the students the names of different types of slide views in MS PowerPoint 2016 covering Normal View, Notes Page View, Slide Show View, Slide Sorter View and Reading View.

Make them understand how to save a presentation in PowerPoint 2016.

Demonstrate to the students how to open a saved presentation in PowerPoint 2016.

Ensure that the scope of **Teacher's Corner** 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 PowerPoint 2016?

Q. Define Title Bar / Status Bar.

Q. What do you mean by Ribbon / Placeholder?

Q. What is a slide in a presentation?

- Q. How to create a new presentation?
- Q. What are the various ways in which a slide show can be started?
- Q. What are the steps to exit PowerPoint 2016?
- Q. What is slide views?
- Q. Can pictures be inserted on a slide?
- Q. What is slide area?
- Q. What are the steps to save a presentation?
- Q. How to open a saved presentation?
- Q. When is Normal / Outline / Slide Sorter / Reading View used?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 44 to 46 in the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity given in the **IN THE LAB** section on page 46 in the main course book. This will enhance the ability of the students and foster Critical Thinking and Leadership & Responsibility skills.

Suggested Activity

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

6

Working with PowerPoint 2016

Teaching Objectives

Students will learn about:

- ✦ Slide Layout
- ✦ Inserting a Picture
- ✦ Moving an Object
- ✦ Applying Shadow Effect
- ✦ Inserting WordArt
- ✦ Inserting SmartArt
- ✦ Rotating Objects
- ✦ Arranging Slides in Slide Sorter View

Teaching Plan

While teaching this chapter, recall the students about the basics of Microsoft PowerPoint 2016.

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.

Introduce WordArt as it allows to create text effects that are not available through font formatting.

Demonstrate the steps involved to add WordArt to a slide.

Show to the students the steps involved in Inserting a Picture and inserting an Online picture.

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.

Number of Periods	
Theory	Practical
2	2

Introduce the term Moving an Object which means to move an object from one place to another on the same slide or within the slides,

Demonstrate the steps involved to move an object.

Share with the students that PowerPoint allows to apply different types of shadow effects on shapes and demonstrate the steps involved to add shadow effect.

Tell the students the steps involved in arranging slides in Slide Sorter View.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Define slide layout.

Q. How can you insert WordArt?

Q. Can pictures be inserted on a slide?

Q. What are the various types of SmartArt diagrams?

Q. How can you move an object?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 56 and 57 of the main course book as **Exercise**.

In Creative Assignment, activity like **IN THE LAB** given on Page 57 of the main course book will enhance the ability of the students and serve as Information Literacy and Leadership & Responsibility activity.

Suggested Activity

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

7

More on Internet

Teaching Objectives

Students will learn about:

- ✦ Uses of internet
- ✦ Common terms

- ✦ Requirements to Connect to Internet

Teaching Plan

While teaching this chapter, tell the students that Internet is a global network in which millions of computers are connected to each other to share information and is an abbreviation of International Network.

Number of Periods	
Theory	Practical
2	2

Explain to the students the various uses of internet.

Share with the students the various requirements to connect to the Internet covering computer system, telephone and cable lines, modem, web browser and ISP.

Introduce the students to common terms like URL, hyperlink, offline, online, surfing, website web page.

Ensure that the scope of **Teacher's Corner** 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. What are the uses of internet?

Q. What are the requirements for an internet connection?

Q. Define Website / Web Page / URL / HyperLink / Surfing.

Q. What does ISP stand for?

Q. Which is the most common Web Browser?

Q. What are the other uses of Internet?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 62 to 64 of the main course book as **Exercise**.

In Creative Assignment, activity **IN THE LAB** given on Page 64 of the main course book will enhance the ability of the students and serve as Initiative and Information Literacy activity.

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.

8

Visual Processing

Teaching Objectives

Students will learn about:

★ Picture Puzzle

★ Directions and Maps

Teaching Plan

While teaching the chapter, tell the students that visual processing is the ability of the brain to use and understand visual information from the environment.

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

Number of Periods	
Theory	Practical
1	0

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.

Ensure that the scope of For **Teacher's Corner** 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 Visual processing?

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 pages 68 and 69 in the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity given in the **IN THE LAB** section on page 69 in the main course book. This will enhance the ability of the students and foster Creativity and Technology Literacy skills.

Suggested Activity

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

9

More Blocks in Scratch

Teaching Objectives

Students will learn about:

✦ Block Categories

✦ Setting the Sprite Position

Teaching Plan

While teaching this chapter, tell the students that Scratch blocks are divided into different categories and each one of them performs different functions.

Number of Periods	
Theory	Practical
2	2

Explain the Block categories and its types using appropriate examples:

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

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

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What are the categories blocks?

Q. What is motion block?

Q. What is looks block?

Q. What is sound block?

Q. What is control block?

Q. How to change sprite's position?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 74 to 76 of the main course book as **Exercise**.

In Creative Assignment, activities like **Hands-On** and **IN THE LAB** given on Pages 76 and 77 of the main course book will enhance the ability of the students and serve as Critical Thinking, Creativity and Technology Literacy activity.

Suggested Activity

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

10 Evolution of AI

Teaching Objectives

Students will learn about:

- ★ 1950s
- ★ 1960s
- ★ 1970 to 1990s
- ★ 2000 to 2010
- ★ 2010 to Present

Teaching Plan

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

Tell the students AI is the ability of a machine to think and learn.

Number of Periods	
Theory	Practical
2	0

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

- 1950s
- 1960s
- 1970 to 1990s
- 2000 to 2010
- 2010 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.

Ensure that the scope of **Teacher's Corner** 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 AI?

Q. Who was Alan Turing?

Q. Who is known as the father of AI?

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

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. Define Google Home.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 82 to 84 in the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity given in the **IN THE LAB** section on page 84 in the main course book. This will enhance the ability of the students and foster Flexibility and Information Literacy skills.

Suggested Activity

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