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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. ”

Computers—Storage and Memory Device

Teaching Objectives

Students will learn about

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

Number of Periods	
Theory	Practical
2	1

Teaching Plan

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 student From data to information: transforming raw facts into meaningful insights.

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

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

Explain in detail about the types of Primary Memory covering:

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

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

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

- **Magnetic Disk** (Hard Disk – Internal and External).
- **Optical Disk** (CD, DVD, Blue-ray Disk – ROM)
- **Flash Drive** (Pen Drive, Memory Card, Solid State Drive)

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.

Ensure that the scope of Teacher's Truff 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 and DVD.
- Q. Define a pen drive and memory card.
- Q. Define a byte.
- Q. Name any three higher units of measurement of computer memory.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 12 to 14 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 14 of the main course book to imbibe problem solving and logical reasoning skills in them. Help the students to solve these questions.

In Creative Assignment, activities like Tangible Task and Digital Drills given on pages 14 and 15 of the main course book will enhance the ability of the students and serve as a Creativity & Innovativeness, Art integration and Digital Literacy, Experiential Learning activity.

Suggested Activity

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

2

GUI Operating System—Desktop Management

Teaching Objectives

Students will learn about

- ✦ Components of Windows 11 Desktop
- ✦ Desktop Background
- ✦ Icons
- ✦ Taskbar

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that windows, created by Microsoft, is the most popular OS with a user-friendly interface. Window has a GUI(Graphical User interface), the latest version, Windows 11, was released on October 5, 2021.

Explain the Component of window 11 desktop.

Tell the students the about the changing the background and explain the changing desktop background and changing the colour scheme.

Familiarise the students with some important icons on the desktop like This PC, Recycle Bin and Folder.

Demonstrate to the students the steps to sort icons on the desktop. Show to the students that uses of This Pc icon.

Introduce the students to the taskbar and its components covering Start button, Search box, Pinned apps and Clock.

Explain the use of the following to the students:

- Start Button
- Pinned Apps
- Clock
- Changing the Volume of the Speaker
- Changing Position of the Taskbar

Ensure that the scope of Teacher's Truff 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 importance of an operating system?
- Q. Give examples of some popular operating systems.
- Q. Which company developed Windows operating system?
- Q. What is desktop background?
- Q. Define icons.
- Q. What is taskbar?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 24 to 26 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 27 of the main course book to imbibe coding and computational thinking skills in them. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 27 of the main course book will enhance the ability of the students and serve as a Digital Literacy and Experiential Learning activity.

Suggested Activity

Ask the students to draw the various shapes of a mouse pointer and the action being performed at that time on an A3 sheet of paper.



Teaching Objectives

Students will learn about

- ✦ Features of Word 2021
- ✦ Saving a Document
- ✦ Deleting Text
- ✦ Cutting/Copying Text
- ✦ Spell Check
- ✦ Creating a New Document
- ✦ Selecting Text
- ✦ Inserting Text
- ✦ Undo/Redo
- ✦ Thesaurus

Teaching Plan

While teaching this chapter, tell the students that word processor is application software designed for typing, managing, and editing text in documents.

Number of Periods	
Theory	Practical
3	2

Tell the student Features of word 2021.

Show the student create a new document and saving a document.

Share with the students that to edit text, first it needs to be selected.

Tell the students about selecting text with the help of keyboard and with the help of mouse.

Demonstrate to the students the different ways in which text can be deleted according to the requirement of the user.

Show to the students that text can simply be inserted by moving the cursor to the point where text is to be entered.

Introduce Cutting as moving the text from one place to another and Copying as duplicating text at another place also.

Familiarise the students with the icons and the shortcut keys to Undo and Redo actions.

Introduce Undo as a feature used to cancel the command and Redo as a feature to reverse the action of Undo.

Introduce the students to Spelling and Grammar Check feature of Word 2021.

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

Demonstrate to the students the method of using Thesaurus feature of Word 2021.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is editing?

- Q. How are letter, word, text and paragraph selected using a keyboard?
- Q. Which key is used to delete a letter?
- Q. What is the use of Undo command?
- Q. When is Redo command used?
- Q. What is the difference between Cutting and Copying text?
- 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 are the shortcut keys to open, save and print a document?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 35 to 37 of the main course book as Tech Trivia and Answer Arcade.

In Creative Assignment, activity like Digital Drills given on page 38 of the main course book will enhance the ability of the students and serve as a Experiential learning and Ethical & Moral Reasoning activity.

Suggested Activity

Ask the students to write a paragraph on My Favourite Festival in Word 2021, check for spelling and grammar mistakes and paste a printout in the computer notebook/practical file.

4 Formatting in Word 2021

Teaching Objectives

Students will learn about

- ✦ Changing Font and Font Size
- ✦ Highlighting text
- ✦ Applying Text Effects
- ✦ Changing Case
- ✦ Line Spacing and Paragraph Spacing
- ✦ Difference between Editing and Formatting
- ✦ Shortcut keys
- ✦ Changing Font Colour
- ✦ Bold, Italic and Underline
- ✦ Aligning the Text
- ✦ Adding Bullets and Numbering
- ✦ Printing a Document

Teaching Plan

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

Number of Periods	
Theory	Practical
3	1

Share with the students the default font and font size in a Word 2021 document.

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

Tell the students the steps involved in changing color of the selected text in the document.

Introduce highlighting feature of Word as marking important text and placing a colored 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 method of:

- Applying text effects
- Aligning the text

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

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

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.

Introduce Line spacing and paragraph spacing.

Explain the finished formatting the text document file can Print. and it's steps.

Tell to the student difference between Editing and Formatting.

Introduce the word 2021 Shortcut keys. These are Combination of two or more keys used to perform specific task.

Ensure that the scope of Teacher's Truff 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 Word 2019 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. Define text alignment.
- Q. What are the different types of text alignment options?
- Q. What does Change Case option do?
- Q. What are bullets?
- Q. When are bullets or numbers added to text?

- Q. What is the difference between Editing and Formatting?
- Q. Name the paste shortcut keys used in Word 2021.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 49 and 50 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code and Clues activity given on page 51 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 51 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Environmental Awareness activity.

Suggested Activity

Ask the students to collect write a paragraph on My Favourite Sport in Word 2021 applying various formatting features to make the paragraph attractive.

5

The Internet—Web Browser

Teaching Objectives

Students will learn about

- ✦ Uses of the Internet
- ✦ Internet Terms
- ✦ Search Engines
- ✦ Requirements to Connect to the Internet
- ✦ Microsoft Edge

Teaching Plan

Number of Periods	
Theory	Practical
2	1

While teaching this chapter, tell the students that computers connected to a network can share data and files efficiently without any delay.

Make the students recall that the internet is a global network of millions of computers and computer networks.

Explain the various uses of internet covering:

- Search information
- E-Mail
- Playing games
- Online shopping
- Online banking
- Share information
- Online chatting
- Social network
- Listing music
- Video calling

Share with the students the various requirements for an internet connection covering computer system, telephone/cable line, modem, web browser and Internet Service Provider (ISP).

Explain the meaning of some common internet terms like URL, Net surfing, World Wide Web, Online and Offline, Website, Webpage, Home page and Hyperlink.

Introduce the Microsoft Edge is a most popular web browser available on almost every computer. And Explain the main parts of Microsoft Edge.

Explain the Search engine is a software tool that helps users find specific information on the Internet by scanning web pages based on their queries.

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

Extension

Ask the students some oral questions based on this chapter.

- Q. What is a computer network?
- Q. What is internet?
- Q. What are the uses of internet?
- Q. What are the requirements for an internet connection?
- Q. Define URL / Hyperlink / Offline / Online / Surfing / Website / Web Page.
- Q. What are the main parts of Microsoft Edge?
- Q. What is a Search Engine?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 60 to 62 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on pages 62 and 63 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 63 of the main course book will enhance the ability of the students and serve as a Experiential Learning activity.

Suggested Activity

Ask the students to prepare a report on some more uses of internet and present the observations to the class.

6

Introduction to PowerPoint 2021

Teaching Objectives

Students will learn about

- ✦ Starting PowerPoint 2021
- ✦ Components of PowerPoint Window
- ✦ Creating a New Presentation
- ✦ Entering Data on the Slide

- ✦ Slide Layout
- ✦ Deleting a Placeholder
- ✦ Viewing Slide Show
- ✦ Open a Saved Presentation
- ✦ Delivering a Presentation
- ✦ Adding New Slide to a Presentation
- ✦ Deleting a Slide
- ✦ Saving a Presentation
- ✦ Exiting PowerPoint

Number of Periods	
Theory	Practical
4	2

Teaching Plan

While teaching this chapter, tell the students that PowerPoint 2021 is a part of Microsoft Office package or suite.

Demonstrate to the students the steps to start PowerPoint 2021.

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.

Demonstrate the steps to:

- Create a new presentation
- Enter data on a slide in title and subtitle placeholders
- Slide layout
- Add new slide to a presentation
- Deleting a placeholder
- Deleting a slide

Introduce slide show as full screen view of the presentation.

Show to the students the method of viewing a slide show.

- Tell the students how to:
 - ◆ Save a presentation
 - ◆ Open a saved presentation
 - ◆ Exit PowerPoint 2021
 - ◆ Delivering a presentation

Ensure that the scope of Teacher's Truff 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 2021?
- Q. Define Title Bar / Status Bar.
- Q. What do you mean by Ribbon / Placeholder?
- Q. What is a slide in a presentation?
- Q. Which key is pressed to delete a selected placeholder?
- Q. What are the various ways in which a slide show can be started?
- Q. What are the steps to exit PowerPoint 2021?
- Q. Define Normal view / Outline view / Reading view / Notes sorter view.
- Q. What are the steps to save presentation file?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 71 to 73 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on pages 73 and 74 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 74 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Ethical & Moral Reasoning activity.

Suggested Activity

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

7 Stepwise Thinking

Teaching Objectives

Students will learn about

- ✦ Reasoning and Problem Solving
- ✦ Stepwise Thinking
- ✦ Case Study
- ✦ Programming

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, show the student an image and tell the correct sequence of steps to draw this scenery.

Tell the students about the following in detail using appropriate examples:

- Reasoning
- Problem Solving

Explain the Stepwise Thinking to the students with the steps involved in the process using suitable examples.

Share some Case Study with the students to explain the above taught factors in problem solving approach.

Tell the students about Programming and give a brief introduction about it.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is reasoning?

- Q. What is problem solving?
- Q. What is stepwise thinking?
- Q. What is case study?
- Q. What is programming?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 79 to 81 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 82 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 83 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Interdisciplinary activity.

Suggested Activity

Ask the students to write a case study to plan and organise a friend's birthday party.

8

Features of File Management

Teaching Objectives

Students will learn about

- ★ File/Folder
- ★ Creating a New File/Folder
- ★ Copying and Moving a File/Folder
- ★ Deleting a File/Folder
- ★ Not Tampering with Other File/Folder
- ★ Organising File/Folder
- ★ Selecting a File/Folder
- ★ Renaming a File/Folder
- ★ Restoring a Deleted File/Folder

Teaching Plan

While teaching this chapter, tell the students that all the data saved on a hard disk consists of files and folders.

Introduce file as an item that contains a collection of related information, a folder as a collection of files and a sub folder as a folder within a folder.

Tell the student Organising files into folders improves efficiency by making it easier to manage, find, and work with your data on a computer.

Tell the students that Windows 10 has some default folders to organise similar files.

Demonstrate to the student steps to create a new file/folder.

Number of Periods	
Theory	Practical
3	2

Demonstrate to the students the steps to:

- Select a file and a folder (including selecting a single file, selecting multiple files, selecting all files and deselecting a file).
- Copying a file and a folder (using Copy-Paste features).
- Moving a file and a folder (using Cut-Paste features).
- Renaming a file and a folder.
- Deleting a file and a folder.
- Restoring a file and a folder.

Tell the student Tampering with others' files or folders without permission is unethical; always work with your own files and secure your data with passwords.

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

Extension

Ask the students some oral questions based on this chapter.

- Q. What is a file / folder / subfolder?
- Q. Define a computer icon.
- Q. Name the default folders of Windows 11 for organizing data.
- Q. Which key is used to select multiple files?
- Q. What is the difference between copying a file and moving a file?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 91 to 93 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 94 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 94 of the main course book will enhance the ability of the students and serve as a Digital Literacy and Experiential Learning activity.

Suggested Activity

Ask the students to collect information about some more features of Windows 11 other than those discussed in the chapter.