

C<>DEPILOT



Ver. 5.0

3



TEACHER'S MANUAL

Extended Support for Teachers



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Teacher's Time Table

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

Teacher's Time Table		B R E A K						
Periods / Days								
		0	I	II	III	IV	V	VI
	Monday							
	Tuesday							
	Wednesday							
	Thursday							
	Friday							
	Saturday							
	Sunday							

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.

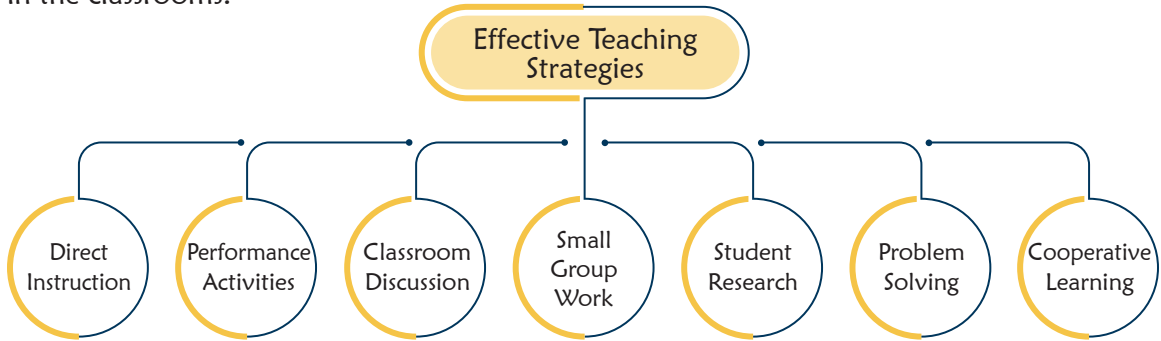
After the class

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

“Knowing yourself is the beginning of all wisdom.”

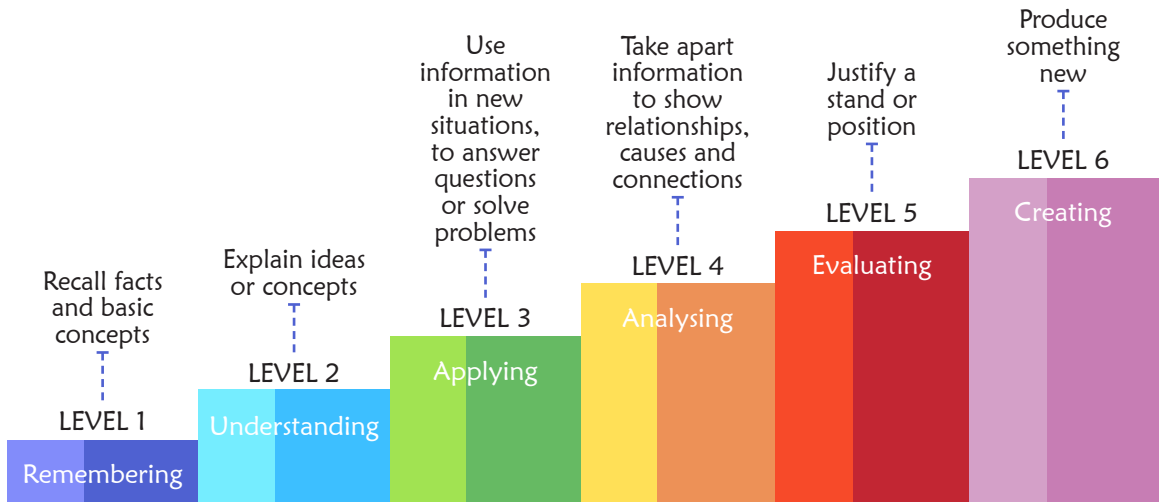
Teaching Strategies

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 Inside a Computer

Teaching Objectives

Students will learn about:

- ✦ Computer Hardware
- ✦ Computer Software
- ✦ Applications with AI

Teaching Plan

Number of Periods	
Theory	Practical
3	1

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **8** of the main course book.

Start by introducing the concept of a computer and how it works, emphasizing that it is a combination of hardware and software.

Introduce to the students about hardware as the physical components of a computer system.

Discuss with students about the different categories of hardware, including input, output, and storage devices.

Explain the students about the input devices as hardware that allows users to send data or instructions to the computer and explain them the common input devices such as keyboard, mouse, scanner, and microphone.

Discuss with the students how the Central Processing Unit (CPU) acts as the brain of the computer, executing instructions and processing data.

Introduce them with parts of the CPU, including the Control Unit (CU), Arithmetic Logic Unit (ALU), and Memory Unit (MU).

Explain the students about output devices as hardware that displays or prints the results of the computer's processing. Discuss with them the common examples such as monitors, printers, speakers and projectors.

Introduce the students with storage devices as components that store data for later use. Discuss with them about different types of storage devices, such as hard disk, USB flash drive, CDs, DVDs, and memory cards.

Explain students about hybrid devices as gadgets that work as both input and output devices and tell them about the common examples such as smartphones, smartwatches and headsets as examples of hybrid devices.

Discuss with the students about system software as software that helps the computer run efficiently and manage hardware. The operating system is an example of system software.

Explain the students about application software as programs that help users perform specific tasks, such as word processing or browsing the web.

Introduce the students with AI as a smart assistant that helps in apps, such as Google Maps, Alexa and Netflix

Discuss with the students how Google Maps helps with navigation, Alexa assists with voice commands and Netflix recommends shows.

Extension

Ask the students some questions based on this chapter:

- Q. What is the difference between hardware and software?
- Q. Name three common input devices and describe their functions.
- Q. How does the CPU function in a computer system?
- Q. What are the types of output devices, and how are they different from input devices?
- Q. Why are storage devices important for a computer system?
- Q. Give examples of hybrid devices and explain how they work.
- Q. What is the role of system software in a computer?
- Q. How does application software differ from system software?
- Q. Name some popular AI-powered applications and explain their uses.
- Q. How does AI enhance the user experience in apps like Google Maps or Alexa?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **13**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **13** and **15**.

Encourage the students to complete tasks like **ART INTEGRATION ACTIVITY** given on page **13**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **16** to **18** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **18** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **18** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Explore Hardware and Software: Have students explore the computer lab, identifying the hardware and software available. They will document the devices and describe their function, comparing them to the examples discussed in class.

2

My Computer Screen

Teaching Objectives

Students will learn about:

- ✦ Windows 11
- ✦ Starting Windows 11
- ✦ Basic Operations on Desktop
- ✦ Features of Windows 11
- ✦ The Desktop
- ✦ Shutting Down a Computer

Teaching Plan

Number of Periods	
Theory	Practical
3	1

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **20** of the main course book.

Start by introducing Windows 11 as the latest operating system by Microsoft, designed for modern, user-friendly experiences.

Show the students how Windows 11 enhances productivity and adds visual features, such as new layouts and improved multitasking.

Discuss with the students about Snap Layouts as a way to organize multiple windows on your screen using preset grid patterns.

Introduce the students with Copilot, an intelligent helper that can assist with tasks, open apps, or give information directly from the taskbar.

Discuss with students that the Desktop is the main screen you see after starting Windows 11, which contains important components like Taskbar, Icons, Search Box, Pinned Apps, Task View, Running Apps, System Tray, Notification Center and Start Button.

Explain how the Taskbar at the bottom of the screen helps you manage open programs and access pinned apps.

Discuss the students about different types of icons, such as Program Icons, File Icons and Folder Icons. Explain the students about task view feature that shows all open windows and allows users to manage multiple virtual desktops.

Discuss with the students about the concept of pinned apps and how students can pin their frequently used apps to the taskbar for quick access.

Explain how to personalize the desktop by changing the background to a picture, solid color, or a slideshow.

Explain the students the concept of a screen saver, which appears after the computer has been idle for a certain time.

Discuss the importance of shutting down the computer properly to avoid data loss or corruption.

Explain how to shut down the computer using the Start Button, then selecting Shut Down from the Start Menu.

Extension

Ask the students some questions based on this chapter:

- Q. What is the purpose of Copilot in Windows 11?
- Q. How does Snap Layout help you manage multiple windows?
- Q. What types of icons can you find on your desktop, and what do they represent?
- Q. How can you change the desktop background in Windows 11?
- Q. What is a screen saver, and how do you set it up?
- Q. What is the Task View feature in Windows 11 used for?
- Q. How do you pin and unpin apps on the Taskbar?
- Q. What steps do you need to follow to shut down your computer properly?
- Q. How can Taskbar icons help you navigate between open applications?
- Q. Why is it important to keep your desktop organised?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **23**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **25** and **29**.

Encourage the students to complete tasks like **EXPERIENTIAL LEARNING** given on page **30**.

Encourage the students to complete tasks like **LIVE LEARNING** page **26**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **31** and **32** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **33** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **33** in the main course book. This will enhance the ability of the students and serve as a **creativity** activity.

Suggested Activity

Ask students to personalize their desktop by setting a unique background, arranging icons, and using Task View for better organization. Encourage them to share their setups with the class.

3 Digital Drawing Using Sketchpad

Teaching Objectives

Students will learn about:

- ✦ Starting Sketchpad
- ✦ Tools
- ✦ Fill Colours
- ✦ Adding Text
- ✦ Components of Sketchpad Window
- ✦ Creating a New Canvas
- ✦ Drawing Shapes
- ✦ Saving the Canvas

Teaching Plan

Number of Periods	
Theory	Practical
2	2

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **36** of the main course book. This will prompt them to recall the mouse surface they use and relate it to the keyboard.

Introduce the students with sketchpad as an online drawing tool that allows students to create artwork digitally, such as designing shapes, posters, and landscapes.

Explain the students how to open Sketchpad by typing the URL <https://sketch.io/sketchpad-v5.1/> into the Microsoft Edge browser.

Discuss with the students about the key components of the Sketchpad window, including the Panel, Drawing Area (Canvas) and the Vertical Toolbar.

Explain the students about the different tools that are present in sketchpad.

Explain the students about the steps for creating a new canvas by clicking the New button and selecting the style and size of the canvas.

Explain the students how to use the Pencil Tool for freehand drawing and sketching.

Walk the students through the steps to draw a flower using the Pencil Tool:

- Select the Pencil Tool.
- Choose the brush size and colour.
- Draw the flower using freehand drawing.

Discuss with the students on how to use the Fill Tool for adding colour to drawings. Explain them about the difference between Pixel Fill and Vector Fill for different types of drawings.

Introduce the students with the Shape Tool for drawing basic shapes like circles, rectangles, stars, and pentagons.

Explain how to use the Text Tool to add text to the artwork. Show how to choose different fonts and styles.

Explain the students about how to save, share, or print artwork using the Export Tool. Students can save their work in multiple formats such as JPEG, PNG, PDF, and SVG.

Extension

Ask the students some questions based on this chapter:

- Q. What is Sketchpad, and how can you use it to create artwork?
- Q. How does the Pencil Tool help in freehand drawing?
- Q. What is the difference between Pixel Fill and Vector Fill in Sketchpad?
- Q. How do you draw a circle using the Shape Tool?
- Q. How do you add text to your drawing in Sketchpad?
- Q. How can you save and export your artwork in Sketchpad?
- Q. What types of shapes can you draw using the Shape Tool?
- Q. What are the key components of the Sketchpad window?
- Q. How can you use the Eraser Tool in Sketchpad?
- Q. How does the Undo Tool help in editing your drawings?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **42**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **39** and **45**.

Encourage the students to complete tasks like **ART INTEGRATION ACTIVITY** given on page **46**.

Encourage the students to complete tasks like **LIVE LEARNING** page **42**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **46** to **48** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **49** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **48** in the main course book. This will enhance the ability of the students and serve as a **creativity** activity.

Suggested Activity

Have students create a custom label with their name and school name inside a shape. They will add

decorations, save their work, and share it with the class.

4 Styling in Word

Teaching Objectives

Students will learn about:

- ✦ Adding Text in a Word Document
- ✦ Selecting Text
- ✦ Deleting Text in a Word Document
- ✦ Editing a Document
- ✦ Formatting a Document

Teaching Plan

Number of Periods	
Theory	Practical
2	2

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **51** of the main course book.

Introduce the students with formatting as the process of changing the appearance of text in a Word document, such as adjusting font styles, size, and colors.

Discuss with the students the importance of formatting in making documents clearer and more attractive. Ask students why formatting is crucial in documents like reports or invoices.

Discuss with the students on how to add text to a Word document using the cursor.

Explain the students with different ways to select text using the mouse (double-click, triple-click, hold Ctrl for sentences) and keyboard shortcuts (Shift + arrow keys).

Discuss with the students on how to delete text using the Backspace and Delete keys.

Introduce the students with Copy, Cut, and Paste tools for duplicating or moving text within a document.

Show the students how to use the Format Painter to copy text formatting from one section to another.

Explain the students the use of Undo and Redo buttons to reverse actions in Word.

Discuss with the students about how to change the font style (e.g., Calibri, Times New Roman) and font size.

Introduce the students with how to change the font color and apply text effects like shadows, glows, and reflections.

Explain the students about how to create bulleted and numbered lists to organize information.

Discuss with the students about text alignment options available in Word: Left, Right, Center, and Justify.

Introduce the students with Find and Replace feature in Word for searching and replacing text

Explain the students about Superscript and Subscript text formatting to represent text in different positions.

Extension

Ask the students some questions based on this chapter:

- Q. What is formatting, and why is it important in Word documents?
- Q. How can you select text in a Word document using the mouse and keyboard?
- Q. What is the difference between Copy and Cut in Word?
- Q. How do you change the font style and size in Word?
- Q. What does the Format Painter tool do in Word?
- Q. How do you change the alignment of text in a Word document?
- Q. What is the Find and Replace tool used for?
- Q. How do you apply superscript and subscript in Word?
- Q. What is the maximum font size that can be set in Word?
- Q. How can you use bullets and numbering to organize information?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **59**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **53** and **60**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** given on page **60**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **57**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **61** to **63** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **64** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **63** in the main course book. This will enhance the ability of the students and serve as an **creativity** activity.

Suggested Activity

Have students create a letter using Word, applying font styles, colors, and alignment to make the letter visually appealing. Students will use bold, italics, and underline to emphasize key points.

Teaching Objectives

Students will learn about:

- ✦ What is the Internet?
- ✦ Internet Requirements
- ✦ Search on the Internet
- ✦ Uses of the Internet
- ✦ Important Internet Terms
- ✦ Staying Safe on the Internet

Number of Periods	
Theory	Practical
3	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **69** of the main course book.

Introduce the students Internet as a global network that connects millions of computers, allowing them to share information and communicate in real-time.

Ask students how they use the Internet at home and in school. Discuss examples such as watching videos, playing games, or chatting with friends.

Explain the students on how the Internet helps students with research, online classes, and learning new skills.

Discuss with students on how the Internet allows communication through emails, video calls, and messaging apps.

Explain the students about how the Internet is used for virtual meetings (Zoom, Google Meet), booking tickets, playing games, and shopping online.

Introduce the students about devices required to connect to the Internet, such as computers, phones, or tablets.

Discuss with the students about ISPs (e.g., Jio, Airtel) and their role in providing access to the Internet.

Explain the students about what a webpage is, and how it displays text, images, and videos.

Discuss with the students about how a website is a collection of related webpages.

Explain the students about the role of web browsers like Google Chrome and Mozilla Firefox in accessing websites.

Discuss with the students about how search engines like Google help find information on the Internet.

Tell the students about Uniform Resource Locator(URL), Email, downloading and uploading.

Introduce the students about the process of searching on the Internet using search engines.

Explain the students about the steps of opening the web browser, typing keywords, clicking the search button, and reviewing results.

Discuss with the students about important safety tips for using the Internet, such as not sharing personal information, using secure websites, being careful with links and attachments, and using strong passwords.

Extension

Ask the students some questions based on this chapter:

- Q. What is the Internet, and how does it help us?
- Q. Name two things you can do on the Internet for learning.
- Q. What are the requirements to use the Internet on a computer?
- Q. How does a search engine help you find information on the Internet?
- Q. What is the difference between a webpage and a website?
- Q. How do you stay safe when using the Internet?
- Q. What is the role of an Internet Service Provider (ISP)?
- Q. What are the steps to search for something on the Internet?
- Q. How can you tell if a website is secure or not?
- Q. What does WWW stand for, and how is it related to the Internet?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **73**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **72** and **75**.

Encourage the students to complete tasks like **ART INTEGRATION ACTIVITY** given on page **73**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **74**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **76** to **78** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **78** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **78** in the main course book. This will enhance the ability of the students and serve as a **media literacy** activity.

Suggested Activity

Ask students to visit some websites on **Internet safety**. Ask them present this in the class.

Teaching Objectives

Students will learn about:

- ✦ Ethics
- ✦ Computer Ethics
- ✦ Computer Use: Right vs Wrong
- ✦ Computer Care Tips

Teaching Plan

Number of Periods	
Theory	Practical
3	1

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **80** of the main course book.

Explain the students about the concept of ethics as rules that guide our decisions about what is right or wrong in life.

Discuss with the students how ethics influence personal behaviour, such as being honest and fair.

Explain the students about computer ethics as the responsible and respectful use of computers and the Internet.

Discuss with the students that how ethics applies to online behaviour, such as keeping personal information safe, being honest, and respecting others.

Provide the students examples of right actions (e.g., being kind online, asking for permission) and wrong actions (e.g., cheating, bullying) while using computers.

Discuss with the students about how to care for computers to ensure they last longer and work well. Mention tips such as avoiding spills, closing the laptop lid gently, and cleaning the screen.

Discuss with the students how to protect personal information when using the Internet. Emphasize the importance of not sharing passwords, home addresses, or personal details online.

Discuss with the students about safe online behaviour, such as not trusting unknown links, avoiding sharing personal information, and being cautious with online conversations.

Extension

Ask the students some questions based on this chapter:

- Q. What is computer ethics, and why is it important?
- Q. What is the difference between right and wrong behaviour when using a computer?
- Q. How can you keep your personal information safe online?
- Q. What are some tips for taking care of a computer?

- Q. Why is it important to be kind and polite while using the Internet?
- Q. What is the role of privacy when using the Internet?
- Q. What actions should you avoid when using a computer or the Internet?
- Q. Why should you always ask for permission before using someone else's work online?
- Q. How does being safe online help protect you from harm?
- Q. What should you do if you see someone being bullied online?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **81**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **81** and **82**.

Encourage the students to complete tasks like **EXPERIENTIAL LEARNING** given on page **82**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **83** to **85** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **85** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **85** in the main course book. This will enhance the ability of the students and serve as an **information literacy** and **critical thinking** activity.

Suggested Activity

Have students explore and perform tasks using cloud-based tools like Google Drive or Dropbox. They will upload and share files to understand how cloud computing works.

Discuss the role of cloud computing in collaborative work and data storage.

7

Solve It Stepwise

Teaching Objectives

Students will learn about:

- ✦ Breaking Tasks into Steps
- ✦ Flow Diagrams: Steps in Order
- ✦ Guess the Next Step
- ✦ Step SMART
- ✦ Find and Fix Mistakes

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **88** of the main course book.

Number of Periods	
Theory	Practical
3	1

Introduce the students with decomposition as the process of breaking down large tasks into smaller, simpler steps.

Discuss with the students how this makes it easier to complete tasks without making mistakes. For Example, Pick up toys, put away clothes, make the bed, vacuum the floor.

Introduce the students with the SMART method for breaking tasks into small, clear and measurable steps. Discuss what SMART stands for:

- S – Make steps clear and specific.
- M – Define measurable steps.
- A – Ensure steps are attainable.
- R – Verify the steps are relevant.
- T – Set up a time-based plan.

Discuss with the students about how flow diagrams use arrows and boxes to show the order of actions in a task. Show an example, like washing hands, and explain how each step is connected using arrows.

- Example: Start → Turn on tap → Wet hands → Apply soap → Rub hands → Rinse → Dry → Stop

Discuss with the students about how sometimes tasks can have mistakes, like missing steps or wrong orders.

- Example: In the task watering a plant, the steps must be in the correct order:
 1. Fill the watering can with water
 2. Pick up the watering can
 3. Water the plant
 4. Place the plant in the sun
- Mistake: You can't water the plant before filling the watering can.

Explain the students about how predicting the next step in a pattern helps with solving problems. Discuss how students can predict the next number in a sequence, like 2, 4, 6, 8, ... where the next number is 10.

Extension

Ask the students some questions based on this chapter:

- Q. What does SMART stand for in the context of breaking down tasks?
- Q. How does a flow diagram help in understanding a task?
- Q. Why is it important to break tasks into smaller steps?
- Q. What are the advantages of using flow diagrams?
- Q. How can the SMART method help you complete tasks more efficiently?
- Q. What is the importance of predicting the next step in a sequence or task?



- Q. How do you correct mistakes in a sequence of instructions?
- Q. What are some examples of tasks you can break into smaller steps?
- Q. Why is decomposition a useful strategy when solving complex problems?
- Q. How does step-by-step planning reduce mistakes in completing tasks?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **90**.

Ask the students to complete the elements like **RAPID RECALL** given on page **93**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** given on page **88**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **91**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **94** to **96** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **97** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **96** in the main course book. This will enhance the ability of the students and serve as a **creativity** and **information literacy** activity.

Suggested Activity

Create a Flow Diagram for a simple task like making a sandwich, breaking it down into 5 simple steps and drawing the diagram using the Flow Diagram tool. Students will write a short paragraph explaining the importance of following step-by-step instructions to complete a task successfully.

8

Say Hello to Scratch

Teaching Objectives

Students will learn about:

- ✦ Introduction to Scratch
- ✦ Components of a Scratch Window
- ✦ Adding a Sprite and a Backdrop
- ✦ Saving a Project
- ✦ Getting Started With Scratch
- ✦ Blocks in Scratch
- ✦ Creating a Scratch Project
- ✦ Opening an Existing Project

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **99** of the main course book.

Number of Periods	
Theory	Practical
2	2

Introduce the students with Scratch as a fun, visual programming language where students can create animations, games, and stories by snapping together blocks of code.

Discuss with the students about the benefits of using Scratch, especially for young learners, such as no need to remember syntax, easy-to-use blocks, and the ability to share projects.

Explain the students about the Scratch interface and its components: Menu Bar, Tabs (Code, Costumes, Sounds), Block Palette, Block Categories, Sprite Pane, Stage, Coding Area, and Go/Stop Buttons.

Walk the students through creating a new project in Scratch:

1. Open Scratch.
2. Add a Sprite by clicking the Choose a Sprite button.
3. Add a Backdrop by clicking the Choose a Backdrop button.

Discuss with students about different types of blocks present in scratch

Discuss with students about how Motion Blocks are used to control sprite movement, like move 10 steps, turn 15 degrees, and go to X, Y.

Explain the students about the role of Event Blocks that trigger actions, like when clicked or when space key pressed.

Explain the students about the use of Looks Blocks to change the appearance of a sprite or display messages, such as say "Hello!" for 2 seconds or think "Hmm..." for 3 seconds.

Explain the students about how to save a Scratch project so that it can be reopened later.

Discuss with the students about how to open previously saved Scratch projects by selecting the File > Open option.

Discuss the students how they can save their projects and demonstrate them on how to open and continue working on them.

Extension

Ask the students some questions based on this chapter:

- Q. What is Scratch, and why is it a great tool for young learners?
- Q. What is the role of the Menu Bar in Scratch?
- Q. How do you add a sprite to your project in Scratch?
- Q. What are Motion Blocks, and how are they used in Scratch?
- Q. How does the Event Block work in Scratch?
- Q. What does the Looks Block do, and how can you use it in your projects?
- Q. How do you save a Scratch project, and why is it important to save your work?
- Q. How can you open an existing project in Scratch?
- Q. What are the benefits of using Scratch for creating interactive projects?
- Q. What types of backdrops can you use in your Scratch projects, and how do you add them?



Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **105**.

Ask the students to complete the elements like **RAPID RECALL** given on page **101** and **105**.

Encourage the students to complete tasks like **ART INTEGRATION ACTIVITY** given on page **106**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **108** and **109** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **110** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **110** in the main course book. This will enhance the ability of the students and serve as a **creativity** activity.

Suggested Activity

Have students create a **short animation** where a sprite moves across the screen, interacts with a backdrop, and says a message when clicked. They should save their work and share it with their classmates.

9

Robot Wonders

Teaching Objectives

Students will learn about:

- ✦ What is a Robot?
- ✦ Components of Robots
- ✦ Advantages of Robots
- ✦ Disadvantages of Robots
- ✦ Famous Robots

Teaching Plan

Number of Periods	
Theory	Practical
3	1

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **112** of the main course book.

Discuss with students about the definition of a robot as a machine that can perform tasks automatically with human-like capabilities.

Explain the students about the components of robots such as:

- **Controller:** Acts as the brain of the robot, receiving information and sending commands.
- **Sensors:** Detect inputs like light, sound, touch, and distance.

- **Actuators:** Generate movement through motors, pumps, or compressors.
- **Power Supply:** Provides energy to the robot.
- **End Effector:** The part of the robot that performs tasks like gripping or cutting.
- **Body/Frame:** The structure that holds all the components together.

Discuss with the student about the advantages of using robots:

- **High efficiency and speed:** Robots work faster than humans.
- **Reduced labour costs:** Robots perform tasks cheaper than human workers.
- **Safety:** Robots perform dangerous tasks, keeping humans safe.
- **Work all day:** Robots work continuously without fatigue.
- **Helping in complex environments:** Robots help in environments like space and deep-sea research.

Discuss with the student about disadvantages of using robots:

- **Maintenance costs:** Robots require regular repairs and maintenance.
- **Limited capabilities:** Robots lack human creativity and cannot perform tasks that require manual skill or creativity.
- **Job losses:** Robots can replace human workers, leading to unemployment.
- **Limitations in creative thinking:** Robots cannot think creatively.

Introduce the students with the famous robots nowadays like:

- **Aibo:** A robotic dog made by Sony.
- **Sophia:** A humanoid robot known for its ability to talk and smile.
- **Roomba:** A robot vacuum that cleans floors automatically.
- **Astro:** Amazon's robot that helps with household tasks.
- **Manav:** India's first 3D-printed humanoid robot.

Discuss with students on how to protect privacy when using robots, emphasizing the importance of sharing only necessary information.

Extension

Ask the students some questions based on this chapter:

- Q. What is a robot, and what makes it different from other machines?
- Q. How do sensors help a robot interact with its environment?
- Q. What are the advantages of using robots in factories?
- Q. Name one famous robot and explain its role.
- Q. What are some disadvantages of using robots?
- Q. How does a controller function in a robot?



- Q. Why are actuators important in making a robot move?
- Q. What would happen if a robot forgot its instructions?
- Q. How does the Roomba robot clean the floors?
- Q. How can we ensure privacy when using robots at home?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **115**.

Ask the students to complete the elements like **RAPID RECALL** given on page **114** and **115**.

Encourage the students to complete tasks like **ART INTEGRATION ACTIVITY** given on page **115**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **117** to **119** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **120** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **119** in the main course book. This will enhance the ability of the students and serve as a **media literacy** activity.

Suggested Activity

Ask students to draw a robot on paper or using a simple drawing tool (like Paint).