TOUCHPAD

Ver. 2.2

3

Teacher's Manual

Extended Support for Teachers

ORANGE
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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."

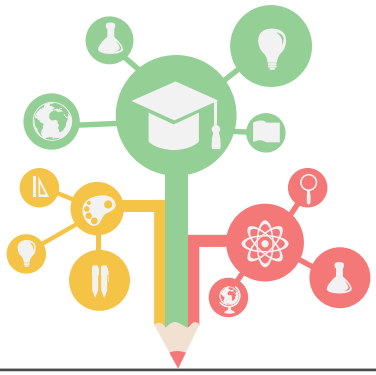
Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/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

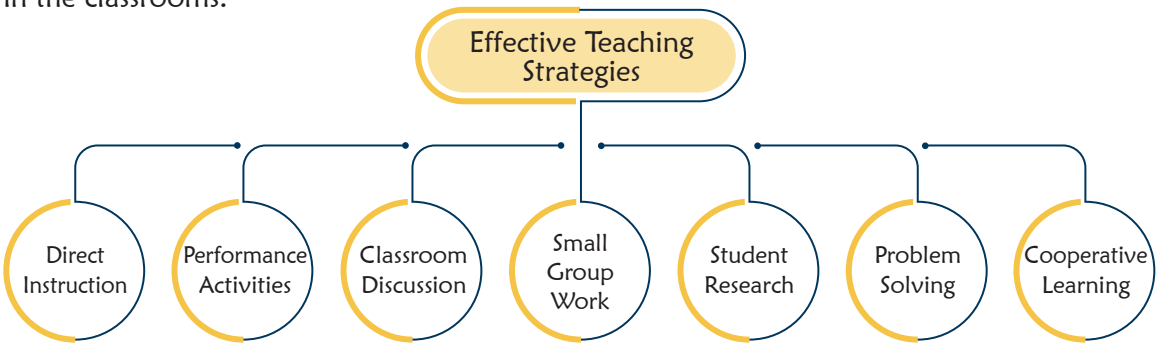
After the class

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

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

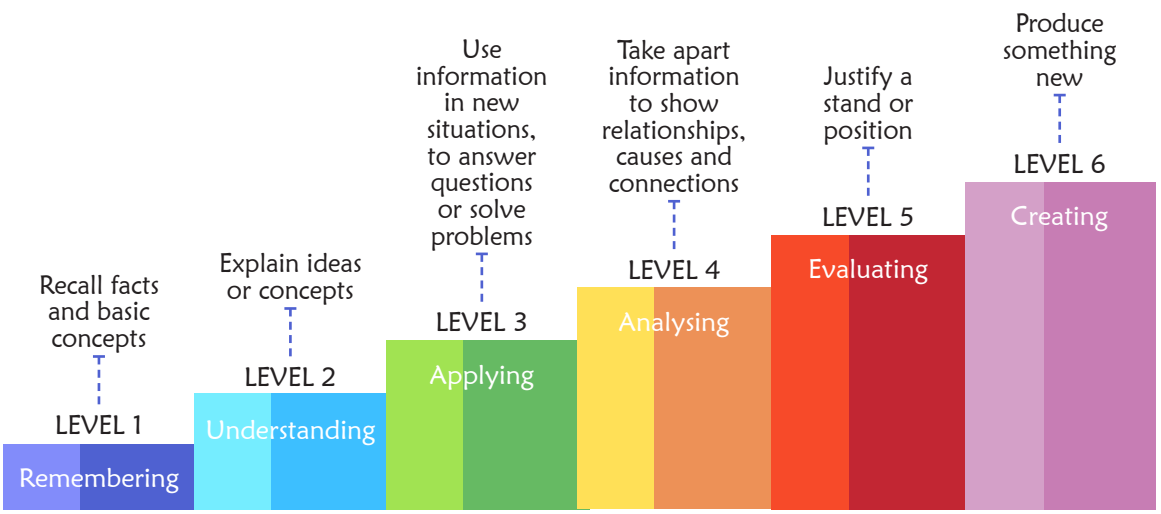
Teaching Strategies

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 3

LESSON PLAN

1 Computer System

Teaching Objectives

Students will learn about

- Introduction to Computer System
- IPO Cycle
- Computer Hardware
- Computer Software

Number of Periods	
Theory	Practical
2	0

Teaching Plan

While teaching this chapter, ask the students to solve the **Let's Plug in** given on Page 7 of the main course book.

While teaching this chapter, tell the students that a computer system is made up of many parts and each part performs a different task.

Tell the students that the computer system is made up of two types of parts—Hardware and Software and the parts that are used to work with the computer are called devices.

Tell the students that the parts of the computer that can be touched are called hardware.

Tell them about Computer Hardware and how it is divided into four groups covering input devices, output devices, processing device and storage devices.

Explain the meaning of the terms input and input devices.

Tell them how keyboard, mouse, scanner, joystick, touchscreen, microphone, web camera and light pen are used to input data into a computer.

Tell the students that CPU is the processing device that works on input and sends the result to the output devices.

Tell them how CPU processes data with the help of Arithmetic Logic Unit (ALU) – for arithmetic and logical calculations, Memory Unit (MU) – for storing data and instructions and Control Unit (CU) – for coordinating between all parts of the CPU.

Tell the students the devices that show us the result of processing done by the CPU are called output devices.

Explain that the result can be in any of these forms: display on the monitor, print by the printer, sound from the speakers.

Demonstrate to them the difference between hard copy and soft copy.

Explain the meaning of the terms output and output devices.

Make the students understand the meaning of the term Storage.

Tell them examples of some commonly used storage devices and basic features of each of the storage device.

Tell them that a computer works on Input-Process-Output (IPO) cycle.

Share some examples of software with the students.

Introduce the students to the two broad categories of software as System software and Application software.

Tell the students the importance of system software for the functioning of the computer system.

Ask the students to solve the exercise **Let's Catch Up** given on page 12.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a Computer System?

Q. Explain Computer Hardware.

Q. Define input / output / processing.

Q. Expand IPO.

Q. Name some input, processing and output devices.

Q. What is a Keyboard / Mouse / Scanner / Joystick / Touchscreen / Microphone / Web Camera and Light Pen?

Q. What is the difference between hard copy and soft copy?

Q. What is a Monitor / Speakers / Headphones / Printer?

Q. Name different types of Printers.

Q. What is a Plotter / Projector and Smartboard?

Q. What is storage?

Q. Give examples of some storage devices.

Q. What is a Software?

Q. Explain Application software and System software.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 15 to 17 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone—Let's Solve, Let's Explore** and **Let's Get Better** given on Pages 17 and 18 in the main course book to imbibe Critical Thinking, Technology Literacy, Creativity and Leadership & Responsibility skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 18 in the main course book. This will enhance the ability of the students and serve as a Information Literacy activity.

Suggested Activity

Ask the students to prepare a comparative table on chart paper comparing different groups of hardware on various parameters with the help of examples and pictures/drawings.

2 Windows 10

Teaching Objectives

Students will learn about

- Features of Windows 10
- Task View
- Windows 10 Desktop
- Control Buttons

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 19 of the main course book.

While teaching this chapter, tell the students that operating system is one of the most important software as without this software we cannot use our computer at all.

Give a brief introduction of Windows 10.

Tell the students the about the useful features of Windows 10.

Make the students aware about the concept of Windows 10 desktop.

Tell the students that an icon is a picture or graphic representation of an application or a file.

Demonstrate to the students the steps to sort icons on the desktop.

Introduce the students to the taskbar and its components covering Start button, Opened programs and Notification Area.

Introduce desktop background as the image that appears at the back of the icons.

Demonstrate to the students the steps to change the desktop background.

Explain to the students about Task view and Control buttons.

Ask the students to solve the exercise **Let's Catch Up** given on page 24.

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 are the important features of Windows 10?

Q. What is desktop?

Q. Define icons.

Q. What is taskbar?

Q. Can the position of the taskbar be changed?

Q. What are Control Buttons?

Q. What is Taskview?

Q. What are the steps to change the desktop background?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 26 and 27 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone—Let's Solve, Let's Explore** and **Let's Get Better** given on Pages 27 and 28 in the main course book to imbibe Critical Thinking, Information Literacy and Leadership & Responsibility skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 28 in the main course book. This will enhance the ability of the students and serve as a Information Literacy and Technology Literacy activity.

Suggested Activity

Ask the students to change desktop background and the position of taskbar.

3 Pivot Animator

Teaching Objectives

Students will learn about

- Uses of Pivot Animator
- Components of Pivot Animator App
- Saving an Animation Project
- Creating a Figure in Pivot Animator
- Getting Started with Pivot Animator
- Creating Simple Animation
- Exporting an Animation
- Loading the Figure

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 30 of the main course book.

Introduce Pivot Animator as a simple and free animation tool used to create stick figure animations.

Explain the uses of Pivot Animator, such as creating short stories, designing custom characters, and exporting animations as GIFs or videos.

Discuss the steps involved in downloading and installing Pivot Animator from its official website.

Show the steps involved in starting Pivot Animator v5.

Make the students aware about all the components of Pivot Animator app window:

- **Title Bar:** Displays the app name and project title.
- **Menu Bar:** Provides options to manage projects.
- **Frame Controls:** Allows adding, deleting, and navigating frames.
- **Player Controls:** Lets users play, pause, and loop animations.
- **Background Button:** Adds or changes backgrounds.
- **Add Figure Button:** Allows adding new stick figures.
- **Figure Controls:** Used to move, rotate, or resize figures.
- **Add Frame Button:** Adds a new frame to the animation sequence for smooth motion.
- **Frame Panel:** Displays animation frames in a timeline.
- **Canvas:** Refers to the area where you create and animate your stick figures.
- **Figure:** Refers to the stick figures made of segments and joints in your animation.
- **Segment Handle:** Lets you reposition or resize a figure's segment.
- **Origin Handle:** Acts as the pivot point for rotating the figure.
- **Status Bar:** Shows information like the current frame number, speed, and active tool.

Show the steps involved in creating a simple animation with example.

Demonstrate the steps involved in saving an animation project with an example.

Show to the students the steps involved in exporting an animation project to turn your project into a finished file, like a GIF or video.

Explain the steps involved in creating a custom stick figure in Pivot Animator with an example.

Demonstrate the steps involved in loading the custom stick figure to use it for creating an animation.

Ask the students to solve the exercise **Let's Catch Up** given on page 35.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Pivot Animator used for?

Q. How does adding frames help in animation?

Q. What is the difference between saving and exporting an animation?

Q. How do you create a custom stick figure?

Q. Name of 3 components of Pivot Animator window.

Q. Which component of Pivot Animator let you play, pause, stop and loop the animation?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 40 and 41 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone—Let's Explore** and **Let's Get Better** given on Page 41 in the main course book to imbibe Technology Literacy and Leadership & Responsibility skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 41 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

- Ask students to create a simple animation of a stick figure walking and save it as a GIF.
- Let them present their animations in class and discuss challenges faced during the process.

4 Using Word 2016

Teaching Objectives

Students will learn about

- Uses of Word 2016
- Components of Word 2016 Window
- Entering the Text
- Opening a Saved Document
- Starting Word 2016
- Creating a New Document in Word 2016
- Saving a Document
- Exiting Word

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 42 of the main course book.

While teaching this chapter, tell the students that Word 2016 is word processing software that helps to type, edit and format documents, letters, poems and reports.

Make the students aware of the various uses of Word 2016.

Demonstrate to the students the steps involved in starting Word 2016.

Show to the students the various components of Word 2016 window covering Title Bar, Quick Access Toolbar, Ribbon, Tabs, Zoom Slider, Rulers, Horizontal and Vertical Scroll Bars, Text / Document Area and Status Bar.

Familiarise the students that while working on MS Word, some frequently used keys other than alphabet and number keys are Spacebar, Enter, Delete and Backspace.

Demonstrate to the students the steps involved in:

- Creating a new document
- Saving a document
- Exiting Word
- Entering the text
- Opening a saved document

Ask the students to solve the exercise **Let's Catch Up** given on page 47.

Extension

Ask the students some oral questions based on this chapter.

Q. What is MS Word?

Q. What are the various uses of Word 2016?

Q. Name some important components of Word 2016 window.

Q. Which company developed Word 2016?

Q. What are the shortcut keys to open / save / print a document?

Q. What are the various ways in which the user can exit from Word 2016?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 49 and 50 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve** and **Let's Explore** given on Page 50 in the main course book to imbibe Technology Literacy skill in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 51 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to create a Word document on Myself. The students should take a printout of the document and paste it in their computer notebook / practical file.

5 Editing and Formatting in Word 2016

Teaching Objectives

Students will learn about

- Selecting the Text
- Formatting the Text
- Editing the Text

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 55 of the main course book.

While teaching this chapter, tell the students that to edit text, first it needs to be selected.

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

Demonstrate to the students the steps involved in Editing the text:

- Inserting The Text
- Coping/Pasting the text
- Cutting/pasting the text
- Deleting the text
- Undo and Redo

Demonstrate to the students the steps to format the text.

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

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

Demonstrate to the students the method of:

- Applying text effects
- Applying borders
- Applying shading
- Changing text alignment
- Applying artistic borders

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.

Ask the students to solve the exercise **Let's Catch Up** given on page 61.

Extension

Ask the students some oral questions based on this chapter.

Q. What is editing?

Q. How is letter / word / text / paragraph selected using a keyboard?

Q. Which key is used to delete a letter?

Q. Define formatting a text.

Q. What is the default font / font size of text in a document?

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. Why is shading added to text?

Q. What are bullets?

Q. When are bullets or numbers added to text?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 66 to 68 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve**, **Let's Explore** and **Let's Get Better** given on Page 68 in the main course book to imbibe Critical Thinking and Technology Literacy skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 69 in the main course book. This will enhance the ability of the students and serve as a Information Literacy and Technology Literacy activity.

Suggested Activity

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

6 Internet

Teaching Objectives

Students will learn about

- Introduction to the Internet
- Requirements for an Internet Connection
- Disadvantages of Internet
- Uses of Internet
- Internet Terms

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 70 of the main course book.

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 learn that internet is a global network of millions of computers and computer networks.

Familiarise the students with the uses of Internet.

Share with the students the various requirements for an internet connection covering computer or a device, telephone or cable line, modem or a network card, web browser and Internet Service Provider (ISP).

Explain the meaning of some common internet terms like URL, Web Browser, Home Page, Website, World Wide Web(WWW) and Web page.

Introduce Uniform Resource Locator (URL) as a unique address or website address used for locating websites.

Tell the students about the disadvantages of Internet.

Ask the students to solve the exercise **Let's Catch Up** given on page 72.

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, Web Browser, Home Page, Website and Web page.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 74 and 75 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve**, **Let's Explore** and **Let's Get Better** given on Pages 75 and 76 in the main course book to imbibe Critical Thinking, Collaboration and Media Literacy skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 76 in the main course book. This will enhance the ability of the students and serve as a Media Literacy activity.

Suggested Activity

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

7 Stepwise Thinking

Teaching Objectives

Students will learn about

- Understanding Stepwise Thinking
- Loops

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 78 of the main course book.

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.

Introduce Looping to the students with simple example.

Ask the students to solve the exercise **Let's Catch Up** given on page 81.

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?

Q, Define loopinhg.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 83 and 84 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve**, **Let's Explore** and **Let's Get Better** given on Pages 84 and 85 in the main course book to imbibe Critical Thinking, Creativity, Social Interaction and Leadership & Responsibility skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 85 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to write a case study to create a greeting card.

8 Let's Learn Scratch

Teaching Objectives

Students will learn about

- Scratch
- Components of Scratch 3 Window
- Adding a Sprite
- Changing Appearance of the Sprite
- Saving a Project
- Exiting Scratch
- Starting Scratch
- Blocks
- Changing the Backdrop
- Creating a New Project
- Opening a Project

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 86 of the main course book.

While teaching this chapter, tell the students that Scratch is a software which helps to understand and create many games.

Familiarise the students with the uses of Scratch.

Demonstrate to the students the steps to start Scratch.

Familiarise the students with the various components of Scratch window covering Title bar, Menu bar, Sprite, Stage Area, Block Palette, Scripts, Coding Area, Blocks, Backdrop, Tabs, Green Flag, Go Button, Tabs(Code, Costumes and Sound) and Stop button.

Introduce Motion Blocks for changing placement, direction, rotation and movement of sprites.

Tell the students the method of identifying Motion Blocks which are colour coded as blue.

Introduce Looks block as the blocks used to add speech and thought bubbles to the sprite and are purple in colour.

Tell the students that Events block is the topmost block which helps to run script on stage.

Show to the students the steps to add a sprite from the Library.

Tell the students the steps to change the backdrop in Scratch.

Demonstrate to the students the steps to change the appearance of the sprite.

Help the students to create a new script to make two sprites move and talk to each other.

Tell the steps to save a project, opening a project and exiting Scratch.

Ask the students to solve the exercise **Let's Catch Up** given on page 91.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?
Q. What are the features of Scratch?
Q. Name the various components of Scratch window.
Q. Define Sprite / Stage Area / Scripts / Green Flag / Stop button.
Q. What is the use of Motion block?
Q. What is the colour code for Motion block?
Q. What are the steps to save a project in Scratch?
Q. What are the steps to open a project in Scratch?
Q. What are the steps to exit Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 95 and 96 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve**, **Let's Explore** and **Let's Get Better** given on Pages 96 and 97 in the main course book to imbibe Technology Literacy, Critical Thinking and Leadership & Responsibility skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 97 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to develop a program of speaking and moving cat in Scratch.

9 AI-Enabled Devices

Teaching Objectives

Students will learn about

- Smartphones
- Chatbot
- Smart Doorbell
- Smart Speakers
- Smartwatch
- Smart TV
- Driverless Cars

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug in** given on Page 98 of the main course book.

Explain the meaning of AI enabled devices to the students with proper and simple examples.

Tell the students what is AI which is around us and what is the purpose of this in real life in simple words.

Define the following to the students:

- Smartphones
- Smartwatch
- Chatbot
- Smart TV
- Driverless Car
- Smart Doorbell
- Smart Speakers

- Relate all these to their daily life routine.

Ask the students to solve the exercise **Let's Catch Up** given on page 102.

Extension

Ask the students some oral questions based on this chapter.

Q. Define the following:

- Smartphones
- Smartwatch
- Chatbot
- Smart TV
- Driverless Car
- Smart Doorbell
- Smart Speakers

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 103 and 104 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve**, **Let's Explore** and **Let's Get Better** given on Pages 104 and 105 in the main course book to imbibe Critical Thinking, Media Literacy and Leadership & Responsibility skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 105 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to research about more smart devices around them.