TOUCHPAD

iPLUS (Ver. 2.1)

2

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

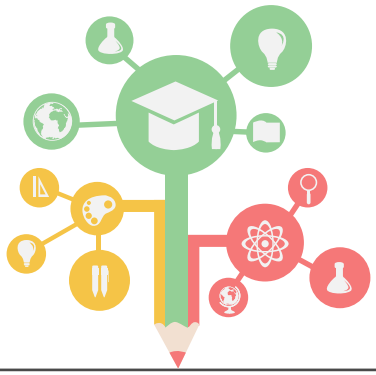
Age 11 - 20 Years

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.

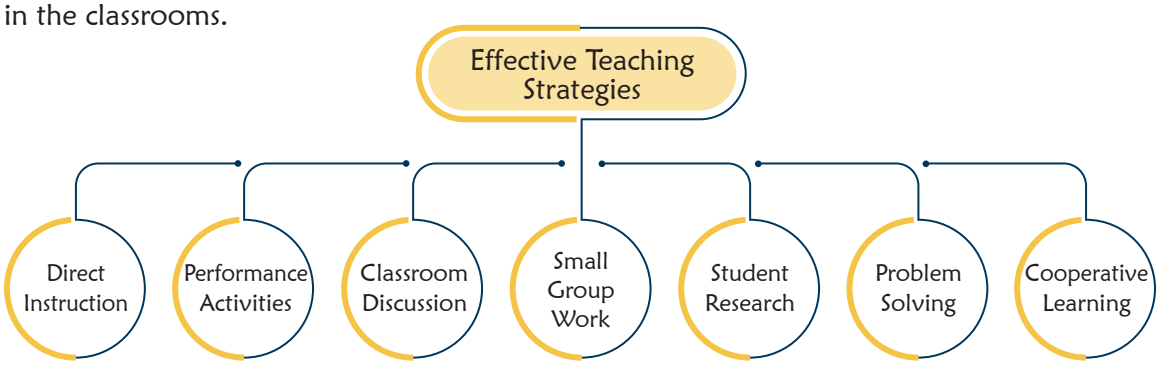
After the class

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

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

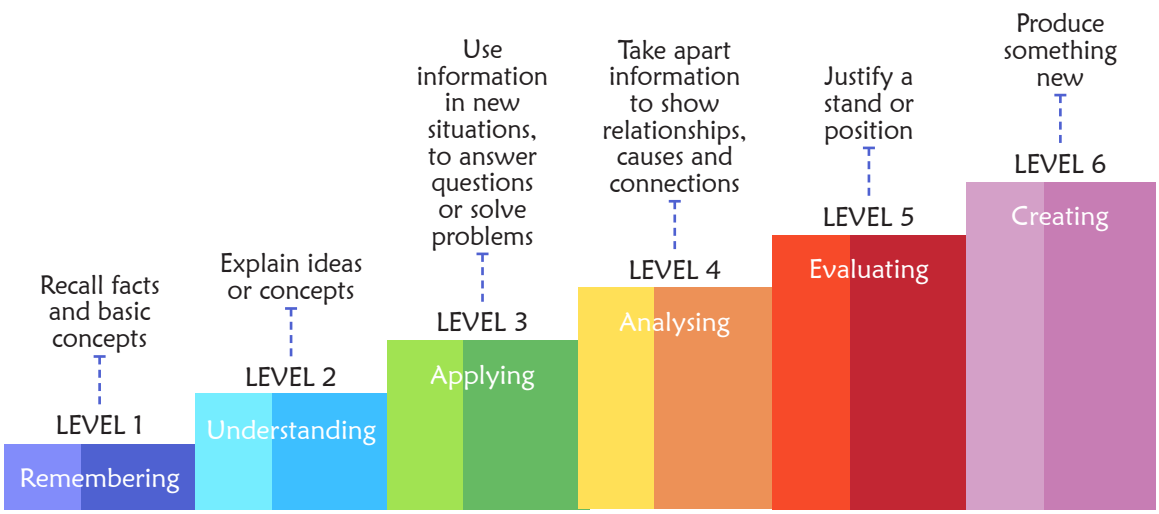
Teaching Strategies

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 2

LESSON PLAN

1 Computer—An Electronic Device

Teaching Objectives

Students will learn about

- Working of Machines
- Advantages of a Computer
- Disadvantages of a Computer
- Working of a Computer
- Teaching and Learning Using Computers
- Human vs Computers

Number of Periods
Theory
3

Teaching Plan

While teaching this chapter, tell the students that a computer works according to the commands or instructions given by us.

Tell the students about the working of some machines like:

- **Juicer** – We put fruit pieces inside it, the juicer squashes the fruits and gives out fresh juice.
- **Washing machines** – We put dirty clothes inside it, the machines wash them and give out clean clothes.

Share with the students that in both these cases, the first step is input, the second step is process and the third step is output.

Tell the students that similarly the computer takes instructions (2, 3, +), adds them (2+3) and gives the result (5).

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

Introduce the term 'Input' as giving instructions to the computer.

Tell the students that keyboard and mouse are used as input devices in a computer.

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

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

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

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

Ask the students to solve the activity in **LET'S CATCH UP** given on page 9 of the main course book to imbibe Interdisciplinary and Digital Literacy skills.

Explain to the students about advantages and disadvantages of a computer and also how they differ from humans.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What does IPO stand for?

Q. What is Input-Process-Output cycle?

Q. Define Input, Process and Output.

Q. Name two input and output devices.

Q. Why is the CPU called the brain of the computer?

Q. Discuss the advantages of a computer briefly.

Q. What are the disadvantages of a computer?

Q. Differentiate between the work ability of a man and a computer.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 14 to 16 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 16 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on pages 16 and 17 of the main course book will enhance the ability of the students and serve as Experiential Learning and Art Integration activities.

Suggested Activity

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

2 Role of Computers

Teaching Objectives

Students will learn about

- Uses of a Computer
- Computers Everywhere
- Role of Computers in Education
- Impact of Computers on Our Daily Lives

Number of Periods
Theory
3

Teaching Plan

While teaching this chapter, share with the students the various uses of a computer covering drawing, painting, doing homework, doing sums, watching movies, listening to music, playing games, writing letters and stories, etc.

Share with the students the names of the places where computers are used and the reason why computers are used there like:

- **At home** – to play games, watch movies, listen to music, search information, etc.
- **In hospitals** – to treat patient and keep their records, prepare medical reports, research about diseases, find new medicines, etc.
- **In offices** – to type and print documents, send and receive e-mails.
- **In schools** – to make time tables and report cards, teach students, keep fee records, keep record of library books, etc.
- **In banks** – to keep details of bank accounts, deposit money in customer's account and take out money from ATM.

Let the students know how computers are used at railway stations, airports, hospitals, banks, police stations, and in the field of designing and space research.

Ask the students to solve the activity in **LET'S CATCH UP** given on page 20 of the main course book to imbibe Digital Literacy skills.

Make the students aware of role of computers in education.

Share with the students how computer has impacted our daily life.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Name a few things that a computer helps us do.

Q. Are computers used only in schools and at homes?

Q. Name two places other than home and school where computers are used.

Q. State any two uses of computers at home, railway station and airport.

Q. State any two uses of computers in a school, bank, office and hospital.

Q. What is the role of computers in education?

Q. Explain how computers impact our daily lives.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 23 to 25 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on pages 25 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore** and **Practical Time** given on pages 25 and 26 of the main course book will enhance the ability of the students and serve as Experiential Learning activities.

Life Skills and Values given on page 26 of the main course book has an advice to enhance the Ethical & Moral Reasoning in students.

Suggested Activity

Ask the students to discuss with their parents how computers are used for:

- Controlling movement of metro trains
- Launching satellites
- Weather forecasting
- Booking tickets for movies

3 Input and Output Devices

Teaching Objectives

Students will learn about

- IPO Devices
- Processing Device
- Storage Devices
- Input Devices
- Output Devices

Number of Periods	
Theory	Practical
3	1

Teaching Plan

While teaching this chapter, tell the students that a computer is made up of many devices which are categorised as input devices, output devices and storage devices.

Introduce input devices as the parts that are used to enter data into the computer and give instuctions

Share with them pictures/models of some input devices like:

- **Keyboard** – It is used for typing text and numbers through keys.
- **Mouse** – It is used for drawing pictures and selecting objects through click.
- **Scanner** – It is used to send document or images from paper to computer.
- **Microphone** – It is used to record voice, music and sounds.

Introduce processing device as the part that works on the input.

Share with them picture/model of processing device CPU. It works like the brain of the computer. It is fixed inside the CPU box/cabinet.

Introduce output devices as the parts that are used to show result or output after processing. Share with them pictures/models of some output devices like:

- **Monitor or Visual Display Unit (VDU)** – It is used to show the data that you input and its result after the computer processes it.

- **Printer** – It is used to print the work done by computer on paper. Tell the students about the types of printers as Inkjet printers and Laser printers.
- **Speakers** – It is used to listen to music, sound and voice on a computer.
- **Headphones** – They work as small speaker and are used to hear sound without disturbing others.
- **Headset** – used as a combination of microphone and headphones.

Ask the students to solve the activity in **LET'S CATCH UP** given on page 29 of the main course book to imbibe Digital Literacy skill.

Introduce storage devices as the parts that are used to store information and data.

Share with them pictures/models of some storage devices like:

- **Hard Disk** – It is fixed inside the CPU box.
- **Compact Disc (CD)** – It is circular in shape and portable storage device.
- **Digital Versatile Disc (DVD)** – It is circular in shape but with more storage capacity than CD.
- **Pen Drive or USB Flash Drive** –It has more storage capacity than DVD but less than Hard Disk.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What are the parts of a computer?

Q. What are input, output and storage devices?

Q. What is a keyboard?

Q. Define VDU.

Q. What is a hard disk?

Q. Give two examples of input, output and storage devices.

Q. What is processing device?

Q. What is the name given to the combination of microphone and headphones?

Q. Expand CD and DVD.

Q. Which has more storage capacity: CD or DVD?

Q. Arrange in increasing order of storage capacity: CD, DVD, Pen Drive and Hard Disk.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 30 to 32 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 32 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on page 33 of the main course book will enhance the ability of the students and serve as Experiential Learning and Creativity & Innovativeness activities.

Life Skills and Values given on page 33 of the main course book has an advice to enhance the Ethical & Moral Reasoning in students.

Suggested Activity

Ask the students to collect information about a storage device – Blue Ray Disc which looks like a CD and DVD but has much more storage capacity than the two.

4 Keyboard—Special Keys

Teaching Objectives

Students will learn about

- Keyboard
- Numeric Keys
- Function Keys
- Punctuation Keys
- Alphabet Keys
- Special Keys
- Combinational Keys
- Symbol Keys

Number of Periods	
Theory	Practical
3	1

Teaching Plan

While teaching this chapter, tell the students that keyboard is used to type on computer screen. Show to the students that a keyboard has small buttons on it called keys.

Make the students count that a computer keyboard has 104 keys.

Tell the students that a keyboard has different kind of keys.

Show them different kinds of keys on the keyboard.

Make the students understand that the alphabet keys (A to Z) on the keyboard are 26 in number and also used to type letters, words and sentences..

Share with the students that the number keys are used to type numbers (0 to 9) and there are two sets of number keys on a keyboard.

Show to the students that there are some special keys also on the computer like:

- **Caps Lock key** – are used to convert the letter we type to capital letters.
- **Tab key** – are used to move cursor several spaces forward at once.
- **Escape key** – places at top-left corner of most of the keyboards and allows you to cancel a task
- **Spacebar key** – longest key at the bottom, used to give blank space between letters and words.
- **Enter key** – also called Return key and used to move to the next line.
- **Delete key** – used to erase letters on the right of the cursor.
- **Backspace key** – used to erase letters on the left of the cursor.
- **Cursor Control keys** – are four in number (up, down, left and right) on the keyboard and used to move the cursor.

Show the students 12 function keys on the keyboard and tell them that each of them has different functions.

Tell the students that combinational keys are used to perform a particular task and are a combination of two or more keys. Explain different combinational keys to the students.

Explain to the students that punctuation keys are used to add a punctuation mark while writing a sentence/paragraph and how to add punctuation marks.

Show them symbol keys and inform them that symbol keys are used to type special signs and symbols.

Ask the students to solve the activity in **LET'S CATCH UP** given on page 39 of the main course book to imbibe Digital Literacy skills.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What are the small buttons on a keyboard called?

Q. How many keys are there on a keyboard?

Q. Name the different kind of keys on the keyboard.

Q. What are alphabet/number keys used for?

Q. How many sets of number keys are there on the keyboard?

Q. What is the use of Caps Lock key?

Q. What is the use of Enter/Spacebar/Backspace key?

Q. How many function keys are there on a keyboard?

Q. What are combinational keys?

Q. What is the use of punctuation keys?

Q. What are symbol keys?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 39 to 41 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 41 of the main course book to imbibe Coding & Computational Thinking skills. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on pages 42 and 43 of the main course book will enhance the ability of the students and serve as Experiential Learning, Creativity & Innovativeness and Digital Literacy activities.

Life Skills and Values given on page 42 of the main course book has an advice to enhance the Ethical & Moral Reasoning and Environmental Awareness in students.

Suggested Activity

Ask the students to paste a picture of computer keyboard in the computer notebook and label Number keys, Alphabet keys, Enter keys, Spacebar key, Backspace key and Cursor Control keys on it.

5 Mouse—An Input Device

Teaching Objectives

Students will learn about

- Types of Mouse
- How to Hold a Mouse?
- Functions of the Mouse Buttons

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a mouse helps us to tell the computer what to do. Share with the students some uses of a computer mouse.

Show to the students that the small arrow moving on the screen is called pointer.

Make the students understand that there are different types of computer mouse, for example:

- **Ball mouse** – has a hard rubber ball under it.
- **Optical mouse** – has an LED sensor at its bottom that helps the pointer on the screen to move.
- **Wireless mouse** – has no wire, runs on batteries and is attached to the computer through Bluetooth.

Show to the students the correct way of holding the mouse with reference to the position of fingers and palm (as shown in the main course book).

Ask the students to solve the activity in **LET'S CATCH UP** given on page 47 of the main course book to imbibe Digital Literacy skills.

Show the students various functions of the mouse buttons:

- **Single-click or Click** – pressing and releasing left button quickly, used to select an icon.
- **Double-click** – pressing and releasing the left button twice quickly, used to open a program.
- **Right-click** – pressing and releasing the right button quickly, used to display a shortcut menu.
- **Scroll** – rolling the scroll wheel upward or downward to move the page up or down.
- **Drag and Drop** – moving the mouse while keeping the left button pressed, use to move objects on screen.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is a mouse used for?

Q. Name the pointing device.

Q. Name the different types of mouse.

Q. Which finger must be placed on left button/right button?

Q. Which finger must be used to scroll the wheel?

Q. Which fingers must be used to hold the sides of the mouse?

Q. What is the meaning of single-click/double-click/right-click?

Q. Define scroll/drag and drop.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 50 and 51 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 52 of the main course book to imbibe Digital Literacy skill. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on pages 52 and 53 of the main course book will enhance the ability of the students and serve as Experiential Learning, Collaboration & Teamwork, Creativity & Innovativeness and Digital Literacy activities.

Life Skills and Values given on page 53 of the main course book has an advice to enhance the Ethical & Moral Reasoning in students.

Suggested Activity

Ask the students to draw a picture of a mouse representing single-click, double click, right-click, drag.

6 Introduction to Paint

Teaching Objectives

Students will learn about

- Steps to start Paint
- Drawing in Paint
- Minimising Paint Window
- Opening/Editing an Old Drawing
- Components of Paint Window
- Maximising Paint Window
- Saving a Drawing
- Closing a Drawing

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that Paint is a program used to draw and colour.

Familiarise the students with Paint window showing Tools group, Shapes group, Colors group and Drawing Area. Demonstrate to the students the steps to start Paint.

Tell the students about the uses of Tools group (contains tools), Colors group (contains colour options) and Shapes group (contains shapes).

Demonstrate the steps to:

- Draw straight lines using Line shape.
- Draw rectangles using Rectangle shape.
- Drawing rounded rectangle using Rounded Rectangle shape.
- Drawing oval using Oval shape.

- Drawing a curve using Curve shape.
- Drawing a polygon.
- Filling colour in a shape using Fill with Color tool.
- Making freehand drawing using Brushes tool.

Ask the students to solve the activity in **LET'S CATCH UP** given on page 59 of the main course book to imbibe Digital Literacy skill.

Tell the students to maximise and minimise a drawing using control buttons.

Show the steps to the students for the following:

- Saving a drawing.
- Opening/editing an old drawing.
- Closing a drawing.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is Paint?

Q. What is the use of Line/Rectangle shape?

Q. What is the use of Brushes/Fill with Color tool?

Q. What is the use of Oval tool?

Q. Under which category is the Paint program listed?

Q. Name any three groups present on Paint window.

Q. What does the Colors/Shapes/Tools group contain?

Evaluation

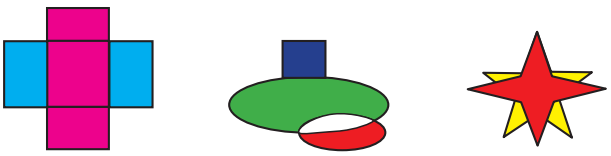
After explaining the chapter, let the students do the course book exercises given on pages 63 and 64 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 65 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on pages 65 and 66 of the main course book will enhance the ability of the students and serve as Experiential Learning, Creativity & Innovativeness and Ethical & Moral Reasoning activities.

Life Skills and Values given on page 65 of the main course book has an advice to enhance the Ethical & Moral Reasoning in students.

Suggested Activity

Ask the students to draw the following shapes in Paint.



7 File Management—An Introduction

Teaching Objectives

Students will learn about

- Storing on a Computer
- Creating a File
- Saving a File at a Different Location
- What Is a File?
- Opening a File

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students how we store different household things in different storage devices at our home.

Explain how do we store information on a computer and different storage devices.

Explain to the students, the need to store information on a computer.

Tell the students what is a file and demonstrate how to create a file.

Demonstrate how to open a previously created file.

Demonstrate and explain the steps to save a file at a different location.

Ask the students to solve the activity in **LET'S CATCH UP** given on page 70 of the main course book to imbibe Digital Literacy skill.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is a file?

Q. Name some storage devices we use to store household objects.

Q. Name any two storage devices used by a computer.

Q. Why do we need to save information on a computer?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 72 and 73 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 74 of the main course book to imbibe Coding & Computational Thinking skills. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore** and **Practical Time** given on page 74 of the main course book will enhance the ability of the students and serve as Experiential Learning activities.

Suggested Activity

Ask the students to draw a flower in Paint and save the file on the desktop.