5

TOUCHPAD®

PLUS Ver. 3.0

Teacher's Manual

Extended Support for Teachers

ORANGE™
www.orangeeducation.in
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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 to 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

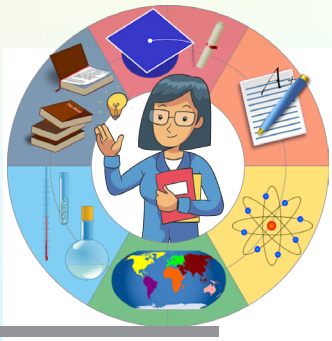
"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years	
Physical	• Motor skills develop resulting 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 needs 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.

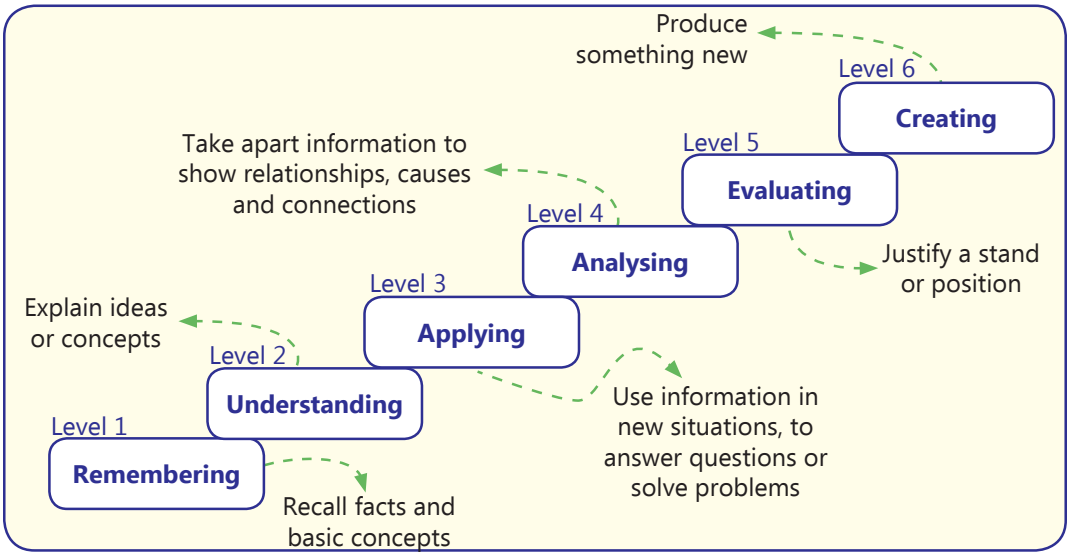
"Knowing yourself is the beginning of all wisdom."

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."

LESSON PLAN

Touchpad PLUS Ver 3.0

Class-5

1. The Computer—An Overview

Teaching Objectives

Students will learn about

- Data and Information
- Limitations of a Computer
- Input Devices
- Output Devices
- Characteristics of a Computer
- Working of a Computer
- Processing Device
- Motherboard

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that the computer is an electronic device which accepts input, processes the data and produces the output.

Tell the students about the meaning of data and information as well as the difference between the two (processed data is information).

Make the students recall the

- Characteristics of a computer covering speed, accuracy, diligence, versatility, compactness, reliability and power of remembering.
- Limitations of a computer covering lack of decision-making ability, lack of intelligence, lack of feelings and time take in planning and programming.

Share with the students that a computer needs input, processing, output and storage devices as hardware and programs as software to work.

Ask the students to recall the Input-Process-Output (IPO) cycle taken by a computer for functioning.

Tell the students that a computer accepts data and instructions through input devices like:

- Keyboard (having alphanumeric, control, function, special and punctuation keys)
- Mouse (allows point, click and drag-drop)
- Scanner (covering hand-held scanner, flatbed scanner and sheetfed scanner)
- Webcam
- Graphic tablet
- Joystick

- Microphone
- Touch screen (See Suggested Activity also)

Tell the students that a computer processes data through CPU (having three components – Arithmetic Logic Unit, Control Unit and Memory Unit).

Tell the students that a computer shows results through output devices like:

- Monitor or Visual Display Unit (VDU)
- Printer (impact printers like dot matrix printers and non-impact printers like inkjet printer, laser printer, etc.)
- Plotters (both flatbed plotter and drum plotter)
- Speakers

Show a motherboard to the students and tell them it is the system or the main circuit board of the computer.

Give a brief introduction about the ports available at the back of the CPU box to the students.

Extension

Ask the students some oral questions based on this chapter.

Q. What is data and information?

Q, Differentiate between data and information.

Q. Name any three characteristics of a computer.

Q. State any two limitations of a computer.

Q. What is the principal cycle on which a computer works?

Q. Expand IPO.

Q. What are input devices?

Q. Name some input devices.

Q. What are the different types of keys present on a standard keyboard?

Q. How many keys are present on a standard keyboard?

Q. What is CPU?

Q. Name the components of CPU.

Q. What are output devices?

Q. Name some output devices.

Q. What is a motherboard?

Q. What are ports used for?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 14 and 15 in the main course book as Checkpoint. Tell the students to try different activities under Hands-On Mind Boggler given on Pages 15 and 16 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 16 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to prepare a collage of different types and models of input / output devices.

2. Computer Memory

Teaching Objectives

Students will learn about

- ☞ Memory
- ☞ Measuring the computer's memory

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that like human beings, computers also have memory to store all data and instructions for performing various tasks.

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

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

Explain in detail about the types of Primary Memory covering:

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

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

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

- **Magnetic Disk** (Hard Disk – Internal and External)
- **Optical Disk** (CD, DVD, Blue-ray Disk – ROM, R and RW))
- **Flash Drive** (Pen Drive, Memory Card) (See Suggested Activity also)

Introduce byte as the basic unit of measuring computer memory and nibble as half a byte.

Share with the students the meaning and relationship between higher units of measurement of computer memory – KB, MB, GB, TB, PB, EB, ZB and YB.

Extension

Ask the students some oral questions based on this chapter.

Q. What is computer memory?

Q. What is primary memory?

Q. Name the different types of primary memory.

Q. Expand RAM / ROM.

Q. What are the different types of RAM?

Q. What is the difference between primary and secondary memory?

Q. Name the categories in which secondary storage devices are divided into.

Q. What are the different types of CDs and DVDs?

Q. Expand CD / DVD.

Q. What is a pen drive / memory card?

Q. Define a byte.

Q. Name any three higher units of measurement of computer memory.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 21 and 22 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 23 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 23 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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

3. Managing Files or Folders in Ubuntu

Teaching Objectives

Students will learn about

- ☞ Home Directory
- ☞ File or Folder
- ☞ Creating a Folder
- ☞ Selecting File or Folder
- ☞ Moving a File or Folder
- ☞ Deleting a File or Folder
- ☞ Status Menu
- ☞ Managing Files or Folders
- ☞ Creating a File
- ☞ Copying a File or Folder
- ☞ Renaming a File or Folder
- ☞ Restoring a File or Folder

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that Ubuntu is a GUI based operating system.

Make the students recall desktop as the first screen on which they can work.

Make them familiar about Home Directory and its purpose.

Tell students about Status Menu and its option of setting date & time.

Tell the students about File and Folder.

Demonstrate to the students how to manage files or folders and the steps used to:

- Selecting a file/folder
- Creating a file/folder
- Renaming a file/folder
- Copying a file/folder
- Moving a file/folder
- Deleting a file/folder
- Restoring a file/folder
- Searching a file/folder

Extension

Ask the students some oral questions based on this chapter.

Q. What is Ubuntu?

Q. Define Home Directory.

Q. What Status Menu?

Q. What is a file?

Q. What is a folder?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 33 and 34 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 35 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 35 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to make a folder on desktop and add files in the folder. Rename the files in that folder and copy them to some other folder.

4. Drawing Objects in LibreOffice Writer

Teaching Objectives

Students will learn about

- ☞ Opening Drawing Toolbar
- ☞ Formatting Shapes
- ☞ Applying Fontwork Gallery
- ☞ Inserting Image from Gallery
- ☞ Deleting an Object or Image
- ☞ Inserting Shapes
- ☞ Adding Stars and Banners
- ☞ Inserting Image from a File
- ☞ Adding Text Box

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that although Writer is a word processor, yet it allows three types of graphics to work upon – Shapes, FontWork Gallery and Pictures.

Familiarize the students with various categories of Shapes and explaining use of Lines, Basic Shapes, Flowchart, Stars and Banners and Callouts.

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

- Drawing a shape
- Adding text to the shape

Tell the students the various types of modifications that can be done on the inserted shape – changing outline colour, changing fill colour, adding shape effects like 3-D rotation and bevel.

Introduce WordArt as application to create text effects which are not possible through text formatting.

Demonstrate to the students the steps to:

- Insert FontWork in a document
- Insert Pictures (from a file)
- Insert Symbols (punctuations or special characters not found on keyboard)

Extension

Ask the students some oral questions based on this chapter.

Q. Name any three categories of Shapes.

Q. What do you mean by formatting a shape?

Q. What does Add Text option do?

Q. What does Bevel do?

Q. What is FontWork Gallery?

Q. Define Symbols.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 49, 50 and 51 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Page 51 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 52 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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

5. Creating Tables in LibreOffice Writer

Teaching Objectives

Students will learn about

- ☞ Inserting a Table
- ☞ Converting Text into the Table
- ☞ Inserting Rows, Columns in the Table
- ☞ Changing Column Width or Row Height
- ☞ Merging Cells
- ☞ Inserting an Image
- ☞ Applying Border and Background
- ☞ Entering Data in the Table
- ☞ Selecting Rows, Columns and Entire Table
- ☞ Deleting Row, Column and Table
- ☞ Changing the Text Alignment
- ☞ Splitting Cells
- ☞ Performing Calculations

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that a table is an arrangement of text in the form of columns and rows.

Also tell them that an intersection of a row and a column is called a cell.

Demonstrate to the students the method of inserting a table in a Writer document.

Show to the students how to select a cell, a group of cells, a row, a column or the whole table.

Demonstrate to the students the steps to:

- Add more rows to a table
- Delete rows from a table
- Add more columns to a table
- Delete columns from a table
- Change width of a column

Introduce merging of cells as combining two or more cells in the same row or the same column into a single cell.

Show to the students the steps to merge two or more cells. Introduce splitting of cells as dividing one cell into two or more cells.

Show to the students the steps to split a cell.

Demonstrate to the students the steps to move a table and resize a table.

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

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is a table?
Q. Define a cell.
Q. What is the shape of the mouse pointer while selecting a cell / row / column / table?
Q Can more rows or columns be added to a table?
Q. Define merging / splitting of cells.
Q. What is the difference between moving a table and resizing a table?
Q. What is the use of Table Styles feature of Writer?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 66 and 67 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 67 and 68 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Pages 68 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create a comparative mark sheet for your marks in different subjects for last three classes.

6. Customizing Slides in LibreOffice Impress

Teaching Objectives

Students will learn about

- ☞ Slide Layouts
- ☞ Inserting Images
- ☞ Slide Views
- ☞ Inserting Fontwork Gallery
- ☞ Changing Background

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that LibreOffice Impress is used to create electronic presentations.

Tell the students that a theme is a set of predefined layouts that can be used to add a professional touch to the presentations.

Demonstrate the steps to choose a theme, change theme colours, fonts and backgrounds.

Explain to the students the names of different types of slide views in Impress covering:

- **Normal View**
- **Outline View**

- **Slide Sorter View**
- **Reading View**
- **Notes View**
- **Handout View**

Extension

Ask the students some oral questions based on this chapter.

Q. What is a theme?

Q. What do you mean by customizing a theme?

Q. Can you change background, colour, fonts, etc. of a theme?

Q. Define slide layout.

Q. When is Normal / Outline / Slide Sorter / Reading View used?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 81, 82 and 83 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 83 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 84 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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

7. Animation and Special Effects in LibreOffice Impress

Teaching Objectives

Students will learn about

- ☞ Master Slides
- ☞ Animations in the Slides
- ☞ Modifying Animation Effects
- ☞ Modifying Slide Transition Effects
- ☞ Working on Master Slides
- ☞ Applying Animation Effects
- ☞ Applying Slide Transition Effects
- ☞ Moving Slides using Navigator

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that LibreOffice Impress is used to create electronic presentations.

Introduce students with Slide Master and the steps involved in using this action into a presentation.

Explain to the students that transitions are used to determine how the presentation moves from one slide to the next.

Tell the students about the various categories of slide transitions available in Impress.

Demonstrate the application of transitions to slides in a presentation.

Introduce animation as the feature that gives a moving effect to text and other objects on the slide.

Show to the students the steps involved in applying custom animation to various objects on a slide.

Tell the students the animation effects applied to different objects on a slide can be reordered.

Share the steps involved in moving the slides using Navigator.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Slide Master?

Q. What is an Animation?

Q. What is a Transition?

Q. How to add animation in a slide?

Q. How to add transition in a presentation?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 92, 93 and 94 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 94 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Pages 94 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Divide the class into two teams. Ask one team to prepare presentation on different planets of the solar system. Use appropriate animation and transition effects.

8. Programming in Scratch

Teaching Objectives

Students will learn about

- ☞ Sprite's Direction
- ☞ Drawing a Polygon
- ☞ Drawing a Square
- ☞ Drawing Patterns

Teaching Plan

Number of periods: 3

While teaching this chapter, tell the students that Scratch is a block-based programming language.

Tell the students that Scratch allows changing the appearance of the selected sprite.

Tell the students about pen block and explain its use with using appropriate examples. Also, show the steps involved in creating programs using pen blocks.

Show the steps involved in drawing a line in Scratch.

Tell the steps involved in drawing polygons in Scratch.

Explain the steps involved in drawing a square in Scratch.

Demonstrate the steps involved in drawing a rectangle in Scratch. Also, show the steps involved in drawing a circle in Scratch.

Explain the steps involved in drawing patterns in Scratch.

Extension

Ask the students some oral questions based on this chapter.

Q. How can you draw a line in Scratch?

Q. How can you draw a polygon in Scratch?

Q. How can you draw a rectangle in Scratch?

Q. How can you draw a square in Scratch?

Q. How can you draw a circle in Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 102, 103 and 104 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 104 and 105 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 105 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to draw a triangle and circle together in a program.

9. Introduction to LibreOffice Calc

Teaching Objectives

Students will learn about

- Features of LibreOffice Calc
- Components of LibreOffice Calc Window
- Entering Data in Spreadsheet
- Performing Simple Calculation
- Saving a Spreadsheet
- Starting LibreOffice Calc
- Data Types in LibreOffice Calc
- Using Auto Fill Feature
- Selecting Items in a Spreadsheet
- Closing the LibreOffice Calc

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that Calc is an application software that helps us to store and analyse data.

Explain to the students the features of Calc in detail.

Demonstrate to the students the steps to start Calc.

Familiarize the students with the various components of Excel 2016 window covering Title Bar, Menu bar, Window control buttons, Standard Toolbar, Formatting Toolbar, Formula Bar, Worksheet Tab, Scroll bars, Status Bar, Row, Column, Row and Column Heading Buttons, Cell, Active Cell,

Tell the students that Calc offers various data types to be entered in a cell covering Numbers, Text, Date and Time.

Tell the students that to enter data in a cell, simply click on the cell and enter data.

Introduce to the students AutoFill feature of Excel as automatically filling a series of data in the worksheet and the steps involved in the same.

Tell the students how to perform simple calculations in Calc.

Demonstrate the students and show the steps involved in:

- Selecting cells
- Selecting columns and rows
- Selecting entire spreadsheet

Demonstrate to the students the steps to:

- Save a spreadsheet
- Close LibreOffice Calc

Extension

Ask the students some oral questions based on this chapter.

Q. What is LibreOffice Calc?

Q. What are the features of Calc?

Q. Name any five components of Calc.

Q. Define Formula Bar / Row / Column / Cell / Active Cell / Cell Range.

Q. State the situation when Number / Text / Date and Time data type used for.

Q. State the shortcut key to save an Calc worksheet.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 115, 116 and 117 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 117 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Pages 117 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to design their marksheet in Calc.

10. More on Internet

Teaching Objectives

Students will learn about

- ☞ Internet
- ☞ Requirements to Connect to Internet
- ☞ Uses of Internet
- ☞ Common Terms

Teaching Plan

Number of periods: 2

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

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

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

Explain the various uses of internet covering:

E-mail – an online communication system

Information – through search engines like Google, Yahoo, etc.

Online shopping

Online chatting

Downloading data

Uploading data

Social Networking – Facebook, Instagram, Twitter, YouTube, WhatsApp, etc.

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

Explain the meaning of some common internet terms like URL, Hyperlink, Offline, Online, Surfing, Website and Web page.

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. What do you understand by Downloading / Uploading data?

Q. Define URL / Hyperlink / Offline / Online / Surfing / Website / Web Page.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 123 and 124 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 124 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 125 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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