

LESSON PLAN

Touchpad PLUS Ver 2.0

Class-6

1. Classification of Computers

Teaching Objectives

Students will learn about

☞ Categories of Computers

☞ Some Other Special Computers

Teaching Plan

Number of Periods: 3

Before starting this chapter, ask the students to solve the question in Let's Plug In given on Page 7 of the main course book.

While teaching this chapter, tell the students that a computer is an electronic device that performs diverse operations with the help of instructions to process the data in order to achieve desired results.

Tell the students that computers are categorized on the basis of:

- Functioning
- Size
- Speed
- Processing power and cost

Make them understand these categories in details with examples.

Tell the students that on the basis of functions, computers are further divided into three categories: **Analog Computer**, **Digital Computer** and **Hybrid Computer** with examples.

Explain the students that according to size, speed, processing power and cost, computers are further divided into categories.

Tell the students about the type of computers with examples:

- explain **Microcomputer** and examples like Desktop computer, Laptop and Tablet.
- explain **Microcomputer** with examples.
- explain **Mainframe Computer** with example.
- explain **Supercomputer** with examples.

Ask the students to solve the exercise Let's Catch Up given on page number 9.

Make them understand that there are some other special computers:

- **Embedded Computer** which is further divided into Digital Camera, ATM and Microwave, etc.
- **Handheld Computer** which is further divided into Smartphone, PDA, Smartwatch, Gaming Consoles, etc.

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 an analog computer?
- Q. What is a digital computer?
- Q. What is a hybrid computer?
- Q. What is a microcomputer?
- Q. What is a minicomputer?
- Q. What is a mainframe computer?
- Q. What is a supercomputer?
- Q. Give examples each of:
 - Analog Computer
 - Digital computer
 - Hybrid Computer

Evaluation

After explaining the chapter, let the students do the exercises given on Page 12 and 13 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, and Let's Explore given on Page 13 and 14 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 14 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 collect pictures of different types of computers and paste them on a chart paper according to the categories explained in this chapter.

2. Basic Concepts of Programming

Teaching Objectives

Students will learn about

- | | |
|--|---------------------------------------|
| ✎ Algorithm | ✎ Characteristics of a Good Algorithm |
| ✎ Uses of an Algorithm | ✎ Writing an Algorithm |
| ✎ Defining Flowcharts | |
| ✎ Solving Problems Using Algorithms and Flowcharts | |
| ✎ Computer Languages | ✎ Language Translator |
| ✎ Working of Language Translators | |



Teaching Plan

Number of periods: 4

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 15 of the main course book.

While teaching this chapter, tell the students about how humans communicate and their language. Also give an introduction of problem solving techniques, algorithm, flowchart, etc.

- **Program** – a set of instructions given to CPU in a pre-defined sequence to complete a task.
- **Computer language** – means by which data and instructions are transmitted to the computer.
- **Syntax** – the grammar of a computer language.
- **Programming** – process of writing a program.
- **Programmers** – people who write computer programs.

Introduce algorithms as set of steps in a sequential and ordered manner to solve any problem or to complete a task.

Encourage the students to write algorithms involving some basic tasks like getting ready for school or involving mathematical problems.

Introduce flowcharts as diagrammatic representation of an algorithm.

Explain the shapes and usage of flowchart symbols covering Start / Stop box, Process box, Decision box, Input / Output box, Flow lines and Connectors.

Make the students learn the rules for drawing a flowchart.

Encourage the students to draw flowcharts for the algorithms written earlier.

Tell the students that computer languages are categorized as low-level languages (machine dependent) and high level languages (machine independent).

Share with the students that low level languages are further classified as machine language (first generation language made up of 0s and 1s) and assembly language (second generation language made up of alphanumeric symbols).

Make the students learn that the high level languages are further classified as third generation languages (examples: **BASIC, COBOL, FORTRAN, PASCAL**, etc.), fourth generation languages (examples: **Visual Basic, Oracle, SQL, JAVA, C++**, etc.) and natural language or fifth generation languages (involving artificial intelligence).

Tell the students the advantages and disadvantages of high level languages over low level languages.

Introduce the concept of language translators as software that convert a high level language into a machine language covering:

- **Assembler** – used to translate assembly language into machine language.
- **Compiler** – used to convert source program at once into machine language before executing it.
- **Interpreter** – used to convert source program one line at a time into machine language before executing it.

Ask the students to solve the question in Let's Catch Up on page number 21.

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 an algorithm?
- Q. What is a flowchart?
- Q. What are computer languages?
- Q. What is Low-Level language?
- Q. What is High-Level language?
- Q. Give examples of each:
 - a. Machine Language
 - b. Assembly Language
 - c. Third Generation Language
 - d. Fourth Generation Language
 - e. Fifth Generation Language
- Q. What are advantages of HLL?
- Q. What are disadvantages of HLL?
- Q. What is a language translator?
- Q. What is an assembler?
- Q. What is the difference between a compiler and an interpreter?
- Q. Explain the working of language translators.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 23 and 24 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, Let's Explore and Let's Get Better given on Page 24 and 25 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 25 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 find some questions which can be solved using algorithm and flowchart. Also, ask the students to collect more information about the computer languages and translators.

3. Advanced Features of PowerPoint 2016

Teaching Objectives

Students will learn about

-  Inserting Audio and Video Files
-  Action Buttons
-  Printing the Presentation

Teaching Plan

Number of periods: 3

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 27 of the main course book.



While teaching this chapter, tell the students that PowerPoint 2016 is used to create electronic presentations.

Tell the students that what elements a movie has to make it interesting.

Show to the students how sound and audio files can be inserted into a presentation.

Explain the steps involved in inserting an audio file into a presentation.

Demonstrate the steps involved in inserting a video file into a presentation.

Explain the students about actions button in PowerPoint.

Demonstrate the steps involved in adding the action button.

Show the students how to print a presentation with labeled steps involved in it.

Ask the student to solve the exercise Let's Catch Up given on page number 31.

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 type of audio files can be inserted into a presentation?

Q. Can we add video files on a slide?

Q. What are action buttons?

Q. How can you add action button in a presentation?

Q. How can you print a presentation?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 34 and 35 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore 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 Tech Practice section on Page 35 and 36 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 charts on various types of pollution. Ask the other team to prepare a PowerPoint presentation on the same topic. Make the students share the benefits enjoyed and limitations faced by each team while working on their project.

4. More on Excel 2016

Teaching Objectives

Students will learn about

✎ Selecting Cells in a Worksheet

✎ Column Width and Row Height

✎ Copying/Moving Data

✎ Inserting Rows/Columns

- | | |
|---------------------------|---|
| ☞ Merging Cells | ☞ Splitting Cells |
| ☞ Formatting Spreadsheets | ☞ Customising Worksheet Tab |
| ☞ AutoFill | ☞ Using Formulas to Perform Calculation |
| ☞ Order of Operation | ☞ Column width and Row height |

Teaching Plan

Number of periods: 4

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 37 of the main course book.

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

Demonstrate how to select cells in a worksheet in Excel. Show them the labeled steps to modify the cell content.

Tell the students the methods of modifying data by cut, copy and paste.

Explain to the students the steps involved in changing row height and column width – both manually and automatically.

Tell the students that Excel allows inserting blank rows and columns at the required place in the worksheet.

Demonstrate to the students how two or more cells can be merged into one and also how a cell can be split up into two or more cells.

Explain some worksheet formatting features of Excel like:

- **Word wrap** – displaying multiple lines of text in a cell
- **Format numbers** – applying various data types to the cells
- **Cell borders** – boundary around a cell or a series of cells
- **Cell styles** – Pre-defined cell border, colour and formatting
- **Cell fills** – adding colours or shades in the cells

Show to the students the steps involved in applying all of these formatting features on a worksheet.

Explain to the students that worksheet tab can be customized by changing its default name and colour.

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 use formulas to perform calculations and also how to copy them.

Explain to the students the order of operation with the help of examples.

Ask the student to solve the exercise Let's Catch Up given on page number 47.

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 the difference between Cut and Copy options?

Q. What does it mean when data in a cell is displayed as #####?



- Q. Define merging of cells.
- Q. Define splitting of cells.
- Q. What is wrap text feature of Excel?
- Q. Name any three number formats available in Excel.
- Q. What is meant by border of a cell?
- Q. What is the use of AutoFill feature?
- Q. How can you use formulas to perform calculations?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 49 and 50 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 50 and 51 in the main course book.

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 Subject Enrichment activity.

Suggested Activity

Ask the students to design their class time-table in Excel 2016.

5. Formulas and Functions in Excel 2016

Teaching Objectives

Students will learn about

- ☞ Data Types in Excel
- ☞ Understanding Cell Range
- ☞ References to Other Worksheets
- ☞ Different Ways to Enter a Formula
- ☞ Cell Referencing in Formulas and its Types
- ☞ Functions

Teaching Plan

Number of periods: 5

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 52 of the main course book.

Introduce data type in Excel to the students.

While teaching this chapter, tell the students that Excel has some built-in formulas called functions.

Share with the students the basic elements and rules of writing a formula in Excel.

Show to them the different methods of copying and pasting a formula.

Introduce cell referencing as use of cell address while writing a formula.

Make them understand the different types of cell referencing and the difference between the three – Absolute, Relative and Mixed.

Tell the students about rules for using Functions and different categories of Functions in Excel.

Demonstrate the use of mathematical functions – SUM, PRODUCT, MOD, SQRT, INT, POWER and COUNT.

Demonstrate the use of text functions – CONCATENATE, LEFT, RIGHT, LEN, UPPER and LOWER.

Demonstrate the use of logical functions – MAX, MIN and AVERAGE.

Demonstrate the use of date functions – TODAY, MONTH, YEAR and DAY

(Refer Suggested Activity 1 also).

Show the different components of an Excel chart.

Familiarize the students with the different types of chart options available.

Demonstrate the steps of:

- Creating a chart.
- Modifying a chart by changing its type, layout and design.

Ask the student to solve the exercise Let's Catch Up given on page number 56 and 61.

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 Functions in Excel?

Q. Name the different elements of a formula in Excel.

Q. What is the order of operation followed in Excel?

Q. Define cell referencing.

Q. Name some important categories of Functions.

Q. State the purpose of SUM / SQRT / MOD / COUNT / LEN / RIGHT / TODAY / MAX Function.

Q. What is the syntax of PRODUCT / INT / POWER / CONCATENATE / LEFT / UPPER / LOWER / MIN / AVERAGE function?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 62 and 63 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 63 and 64 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 64 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 enter their last mark sheet in Excel and calculate total marks scored, average marks scored, maximum and minimum marks amongst all the marks and the number of subjects using various Functions used in Excel.



6. Introduction to Small Basic

Teaching Objectives

Students will learn about

- | | |
|---|---------------------------------------|
| ☞ Opening Small Basic | ☞ Small Basic Environment |
| ☞ Creating Your First Small Basic Program | ☞ Saving a Program |
| ☞ Running a Program | ☞ Opening a Program |
| ☞ Sharing a Program | ☞ Elements of Small Basic Programming |
| ☞ Statements | ☞ Maths Library Functions |
| ☞ Sample Programs | |

Teaching Plan

Number of periods: 2

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 68 of the main course book.

While teaching this chapter, tell the students that **BASIC** is a very simple programming language used for calculations and business applications. Its name stands for Beginners All-purpose Symbolic Instruction Code. Small Basic is a simpler version of BASIC.

Show to the students the steps to be taken to start Small Basic

Small Basic provides you a simple yet powerful development environment. Let's learn about the Small Basic environment:

- **Title Bar:** It gives us the information about the program in which we are working.
- **Editor:** It is identified as the area where we write our Small Basic programs. When we open a saved program, it will show up in this editor. We can then modify it and save it for later use. We can also open and work with more than one programs at a time. Each program you are working with will be shown in a different Editor window. The editor window that contains the program you are currently working on is known as an active Editor window.
- **Toolbar:** It is used to give commands. It contains commands like New, Open, Save, Save As, Cut, Copy, Paste and Run. We can use these commands by clicking on the command buttons.
- **Help Area:** When we write a program in the Editor, this area displays the tips and hints for the program.
- **Surface:** This is an open area where we can move and organize our Editor windows for each Small Basic program.

Introduce the steps of creating first Small Basic program.

Show to the students the steps involved in saving a program.

Show to the students the steps involved to run, open and share a program.

Explain the elements of Small Basic programming:

- Variables
- Operators
- Keywords
- Comments

Tell the students about the Statements and its type.

Show the students the use of Maths Library functions along with some sample questions.

Ask the student to solve the question in Let's Catch Up given on page number 73.
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 Small Basic?
- Q. Define the following:
 - a. Title bar b. Toolbar c. Editor d. Help Area e. Surface
- Q. What is a variable?
- Q. What are operators?
- Q. What are keywords?
- Q. What are comments?
- Q. What are statements?
- Q. What are maths library functions?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 78 and 79 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 79 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 79 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 simple program in Small Basic.

7. Control Statements in Small Basic

Teaching Objectives

Students will learn about

- ☞ Selection Statements
- ☞ If-Then Statement
- ☞ If-Then-Else Statement
- ☞ Branching Statement

Teaching Plan

Number of periods: 3

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 80 of the main course book.

While starting the chapter tell the student about the basic elements of Small Basic and revise the earlier chapter.



Tell the students about the selection statements and explain its types.
Explain the use of If-Then statements with proper example.
Demonstrate the use of If-Then-Else and Nested If & If-Else statements with proper example.
Show the use of branching statements with proper example.
Demonstrate the use of Goto statement with Else statement with proper example.
Ask the student to solve the question in Let's Catch Up given on page number 84.
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 selection statement?
- Q. What is the purpose of If-Else statement?
- Q. What is the purpose of If-Then-Else statement?
- Q. What is the purpose of Nested If and If-Else statement?
- Q. What are branching statements?
- Q. What is the purpose of Goto statement?
- Q. What is the purpose of Goto with Else statement?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 87 and 88 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 88 and 89 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 89 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 use selection and branching statements to create programs in Small Basic.

8. Introduction to Animate CC

Teaching Objectives

Students will learn about

- | | |
|---------------------------------------|-------------------------------------|
| ☞ Starting Adobe Animate CC | ☞ Creating a Document in Animate CC |
| ☞ Components of the Animate CC Window | ☞ Saving a Document in Animate CC |
| ☞ Creating Shapes in Animate CC | ☞ Gradient Fill |
| ☞ Creating a Symbol in Animate CC | |

Teaching Plan

Number of periods: 3

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 91 of the main course book.

Tell the students about Animate CC and the steps to start the application.

Show the students how to create a document in Animate CC with labeled steps.

Explain the components of Animate CC window: stage, timeline, tools panel, properties panel, library panel, menu bar along with the functions.

Show the students the steps involved to save a program.

emonstrate to the students the steps involved to create shapes in Animate CC.

Explain the use of gradient fill in Animate CC.

Show the students the steps involved to create a symbol in Animate CC.

Ask the student to solve the exercise Let's Catch Up given on page number 97.

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 Animate CC?

Q. How to create a document in Animate CC?

Q. Define:

a. Stage

b. Timeline

c. Tools Panel

d. Properties Panel

e. Library Panel

f. Menu Bar

Q. What is gradient fill?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 99 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 100 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 100 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 any shape in Animate CC using the tools taught in this chapter.

9. Introduction to HTML

Teaching Objectives

Students will learn about



- | | |
|-------------------------------------|----------------------------|
| ☞ What is HTML? | ☞ HTML Tags and Attributes |
| ☞ Rules for Writing HTML Codes | ☞ HTML Document Structure |
| ☞ Creating and Saving HTML Document | ☞ Basic HTML Tags |
| ☞ Designing a Web Page | ☞ Editing an Existing HTML |

Teaching Plan

Number of periods: 5

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 101 of the main course book.

While teaching this chapter, tell the students that websites consist of millions of pages called web pages which contain text, graphics, audios, videos and links to other pages.

Introduce Hypertext Markup Language (HTML) as language that describes the structure of a web page. Make the students understand the meaning of the terms like hypertext and markup language. Tell the students about the tools needed for working with HTML.

Make the students aware about the different types of HTML editors – WYSIWYG editor and Text editor. Familiarise the students with basic HTML terms like tags, container tags, empty tags, block level tags, text level tags and attributes.

Tell the students about the concept of nesting of tags.

Share with the students the general rules followed for writing HTML codes.

Show to the students a HTML document and make them understand and identify the various sections and structure of the HTML document.

Demonstrate to the students the steps involved in:

- Creating a HTML document
- Saving a HTML document
- Previewing a web page.

Tell the students about the meaning and use of basic HTML tags covering <HTML>, <HEAD>, <TITLE> and <BODY> tags along with their attributes.

Tell the students about some more HTML tags like Heading, Paragraph, Line Break, Horizontal Ruler (and its attributes), Bold, Italic, Underline, Superscript and Subscript tags.

Share with the students about the use of tag and its attributes.

Demonstrate to the students the steps involved in designing a web page using the various HTML tags discussed.

Show the students the method of editing an existing HTML document.

Also ask the students to solve the question in Let's Catch Up given on page number 108.

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 HTML?
- Q. Define hypertext and Markup language.
- Q. Name the different types of HTML editors.
- Q. What are tags and attributes?

- Q. State the rules followed while writing HTML codes.
- Q. Name the text editor most commonly used to write HTML codes.
- Q. State the use of <HTML> / <HEAD> / <BODY> / <TITLE> tags.
- Q. What is the difference between container tags and empty tags?
- Q. What attributes can be taken by the tag?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 110 and 111 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let’s Solve, Let’s Explore and Let’s Get Better given on Page 111 and 112 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 112 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 develop a similar web page in HTML.

10. Internet Services

Teaching Objectives

Students will learn about

-  The Internet
-  How the Web Works?
-  Using URLs
-  World Wide Web
-  Using Web Browser
-  Services of Internet

Teaching Plan

Number of periods: 5

Before starting the chapter, ask the students to solve the question in Let’s Plug In given on Page 113 of the main course book.

While teaching this chapter, tell the students that what is Internet and its history.

Tell the students and define what is World Wide Web.

Show the students how the web works and meaning of URL. Demonstrate their use of URL using address bar and hyperlink.

Make the students understand the meaning of services of Internet like E-mail, E-Greetings, Online Shopping, Online Reservation and Online Education with labeled steps to use them.

Also ask the students to solve the question in Let’s Catch Up given on page number 115.

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 Internet?

Q. Define the following:

- URL
- E-mail
- E-Greetings
- Online shopping
- Online Reservation
- Online Education

Evaluation

After explaining the chapter, let the students do the exercises given on Page 122 and 123 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, Let's Explore and Let's Get Better given on Page 123 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 123 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 learn how to use the internet services.