

LESSON PLAN
COMPUTER—A WONDER MACHINE
Class : VII

Chapter 1: NUMBER SYSTEM—AN INTRODUCTION

LEARNING OBJECTIVES

After studying this chapter, students will be able to:

- Understand what a Number System is.
 - Explain why computers use Binary Language.
 - Identify types of Number Systems – Decimal, Binary, Octal and Hexadecimal.
 - Understand base and positional value concept.
 - Convert Decimal to Binary using Repeated Division Method.
 - Convert Binary to Decimal using Positional Method.
 - Recognize real-life applications of number systems.
-

PERIOD 1: INTRODUCTION TO NUMBER SYSTEM AND COMPUTER LANGUAGE

Time: 45 minutes

Previous Knowledge Testing (5 min)

- How do we talk to each other?
- Do computers understand English or Hindi?

Content Explanation (25 min)

- Communication Language vs Computer Language
- Computer understands only Numbers
- Binary Language—0 and 1
- Meaning of Number System
- Everyday examples—Mobile numbers, Roll numbers

Activity (10 min)

Students write their registration number and parents' mobile numbers and discuss why numbers are important.

Visual Aid (3 min)

Show keyboard and binary digits (0, 1) chart.

Recapitulation (2 min)

- What language does a computer understand?
 - What is a number system?
-

PERIOD 2: DECIMAL NUMBER SYSTEM

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Which numbers do we use daily?

Content Explanation (25 min)

- Decimal Number System
- Base-10 concept
- Digits 0–9
- Positional Values – Ones, Tens, Hundreds, Thousands
- Example Breakdown (*e.g.*, 3456)

Activity (10 min)

Students perform ‘Do It Yourself’—break down of decimal number in the class.

Visual Aid (3 min)

Teacher draws place value chart on the board.

Recapitulation (2 min)

- What is the base of decimal system?
 - What is the maximum digit in decimal?
-

PERIOD 3: BINARY NUMBER SYSTEM

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you seen ON/OFF switches?

Content Explanation (25 min)

- Binary Number System – Base-2
- Digits – 0 and 1
- Bit Meaning
- Powers of 2
- 3-bit patterns (000–111)

Activity (10 min)

Students perform the provided ‘Do It Yourself’ activity in the class.

Visual Aid (3 min)

Teacher draws the given Binary chart on the board.

Recapitulation (2 min)

- How many digits in binary?
 - What is a bit?
-

PERIOD 4: OCTAL AND HEXADECIMAL NUMBER SYSTEM

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Can numbers use letters?

Content Explanation (25 min)

- Octal Number System—Base-8 (0–7)
- Hexadecimal Number System—Base-16 (0–9, A–F)
- Letter values A=10 to F=15
- Simple examples

Activity (10 min)

Students perform ‘Do It Yourself’ activity—Conversion of hexadecimal number to decimal number in the class.

Visual Aid (3 min)

Comparison table of all number systems.

Recapitulation (2 min)

- What is the base of octal?
 - What is the base of hexadecimal?
-

PERIOD 5: DECIMAL NUMBER TO BINARY NUMBER CONVERSION

Time: 45 minutes

Previous Knowledge Testing (5 min)

- What is division by 2?

Content Explanation (25 min)

- Repeated Division Method
- Step-by-step example
- Reading remainder bottom to top

Activity (10 min)

Students perform ‘Do It Yourself’ activity to convert 29_{10} to Binary in the class.

Visual Aid (3 min)

Present the solved examples on board provided in the chapter.

Recapitulation (2 min)

- Which method is used?
 - What is the direction of remainder reading?
-

PERIOD 6: BINARY NUMBER TO DECIMAL NUMBER CONVERSION

Time: 45 minutes

Previous Knowledge Testing (5 min)

- What are powers of 2?

Content Explanation (25 min)

- Positional Method
- Multiply digit with position value
- Add results
- Example conversion

Activity (10 min)

Students perform 'Do It Yourself' activity to convert $(11110)_2$ to decimal.

Visual Aid (3 min)

Teacher draws the provided Position value table on the board.

Recapitulation (2 min)

- What is the first position value?
- What is the final step in conversion?

LESSON PLAN
COMPUTER—A WONDER MACHINE
Class : VII

Chapter 2: ADVANCED FEATURES OF EXCEL

LEARNING OBJECTIVES

After studying this chapter, students will be able to:

- Understand the need of advanced Excel features.
 - Explain Sorting and its types – Ascending & Descending.
 - Perform Single Column and Multi-Level Sorting.
 - Understand the concept of Filtering Data.
 - Apply Auto Filter and Multiple Filters. Also, how to remove filters using different options.
 - Use Goal Seek feature to find input values.
 - Understand the steps of Printing a Worksheet.
-

PERIOD 1: INTRODUCTION TO ADVANCED FEATURES AND SORTING

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you ever searched a name in a long list?
- Have you arranged names alphabetically?

Content Explanation (25 min)

- Need for Advanced Features in Excel
- Meaning of Sorting
- Types of Sorting:
 - Ascending (A–Z)
 - Descending (Z–A)
 - ◆ Steps to Sort a Single Column

Activity (10 min)

Students perform 'Do It Yourself'—Create a list of 10 classmates and practise A–Z and Z–A sorting.

Visual Aid (3 min)

Present the images given in the chapter.

Recapitulation (2 min)

- What is sorting?
 - Name two types of sorting.
-

PERIOD 2: MULTI-LEVEL/CUSTOM SORT

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Can we arrange marks and names together?

Content Explanation (25 min)

- Need for Sorting by More than One Column
- Custom Sort Option
- Add Level Feature
- Header Row Checkbox
- Example—Name, Subject, Score

Activity (10 min)

Students perform 'Do It Yourself' activity—Create Student Grade Sheet and practise sorting by Subject then Marks. Later, students will perform it in the computer lab.

Visual Aid (3 min)

Present the screenshots provided in the chapter.

Recapitulation (2 min)

- What is multi-level sorting?
-

PERIOD 3: INTRODUCTION TO FILTERING DATA

Time: 45 minutes

Previous Knowledge Testing (5 min)

- How do you find only your marks from the class result?

Content Explanation (25 min)

- Meaning of Filtering
- Difference between Sorting & Filtering
- Auto Filter Concept
- Steps to Apply Filter
- Shortcut Key CTRL+SHIFT+L

Activity (10 min)

Discuss 'Do It Yourself'—Apply filters activity in the class and later students will perform it in the lab.

Visual Aid (3 min)

Show drop-down arrows in header row and other screenshots given in the chapter.

Recapitulation (2 min)

- What is filtering?
-

PERIOD 4: MULTIPLE FILTERS & REMOVING FILTERS

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Can we search Maths marks above 80 only?

Content Explanation (25 min)

- Applying Multiple Filters
- Filter by Text/Number
- Removing Filters:
 - Filter Button
 - Clear Option
 - Select All Checkbox

Activity (10 min)

Discuss 'Do It Yourself' activity—Applying multiple filters and later implementing it in the practical session.

Visual Aid (3 min)

Present the filtering screenshots provided in the chapter.

Recapitulation (2 min)

- How do we remove filters?
-

PERIOD 5: GOAL SEEK FEATURE

Time: 45 minutes

Previous Knowledge Testing (5 min)

- If you know total marks, can you find missing marks?

Content Explanation (25 min)

- Meaning of Goal Seek
- When to use Goal Seek
- Steps to use Goal Seek feature
- Real-Life Examples—Interest, Sales Target

Activity (10 min)

Discuss 'Do It Yourself' activity—Practise Goal Seek in the class. Later, students will perform it in the computer lab.

Visual Aid (3 min)

Present Goal Seek dialog box screenshot given in the chapter.

Recapitulation (2 min)

- What is Goal Seek used for?
-

PERIOD 6: PRINTING A WORKSHEET

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you printed a project before?

Content Explanation (25 min)

- File Tab → Print Option
- Backstage View
- Print Settings:
 - Number of Copies
 - Orientation
 - Margins
 - Page Size
 - Scaling
 - Printer Selection

Activity (10 min)

Students practise 'Do It Yourself' activity 'Different Printing Scenarios' in the lab.

Visual Aid (3 min)

Show the images of Print Pane provided in the chapter.

Recapitulation (2 min)

- From where do we print a worksheet?

LESSON PLAN
COMPUTER—A WONDER MACHINE
Class : VII

Chapter 3: CHARTS IN EXCEL

LEARNING OBJECTIVES

After studying this chapter, students will be able to:

- Understand the meaning and need of Charts in Excel.
 - Explain the advantages of representing data graphically.
 - Identify components of a chart – Title, Axes, Data Series, Legends.
 - Create different types of charts using Excel.
 - Use Chart Design and Format tabs.
 - Change chart type, layout and style.
 - Switch Row and Column data.
 - Modify Data Range of charts.
 - Format chart background, colors and patterns.
 - Move charts to another worksheet.
-

PERIOD 1: INTRODUCTION TO CHARTS AND NEED FOR CHARTS

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you seen graphs in newspapers or TV?
- Which is easier to understand—table or picture?

Content Explanation (25 min)

- Meaning of Charts or Graphs
- Why charts are used
- Advantages—Easy comparison, visual appeal, trend analysis
- Real-life examples—Marks, Attendance, Sports Scores

Activity (10 min)

Students perform 'Do It Yourself' activity—Collect simple class data (boys/girls, favorite subject) in the class.

Visual Aid (3 min)

Show sample bar or column chart on the board or on PPT.

Recapitulation (2 min)

- What is a chart?
 - Why are charts useful?
-

PERIOD 2: COMPONENTS OF A CHART

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you seen titles on graphs?

Content Explanation (25 min)

- Title
- Vertical Axis (Y-Axis / Value Axis)
- Horizontal Axis (X-Axis / Category Axis)
- Data Series
- Legends

Activity (10 min)

Students perform 'Do It Yourself' activity -- Favorite fruit chart on paper with labels in the class.

Visual Aid (3 min)

Teacher draws labelled chart diagram on the board.

Recapitulation (2 min)

- Name any two components of a chart.
-

PERIOD 3: CREATING A CHART IN EXCEL

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you inserted pictures in Word before?

Content Explanation (25 min)

- Collect Source Data
- Select Data Range
- Insert Tab → Charts Group
- Selecting Chart Category and Type
- Chart appears on sheet

Activity (10 min)

Students perform 'Do It Yourself' activity--To create a Column Chart of Student Scores in the class. Later, students will perform it in the computer lab.

Visual Aid (3 min)

Show students charts and screenshots provided in the book on this topic.

Recapitulation (2 min)

- Which tab is used to insert charts?
-

PERIOD 4: FORMATTING CHARTS

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Can we change colors of a picture?

Content Explanation (25 min)

- Chart Design Tab Introduction
- Chart Layouts
- Chart Styles
- Change Chart Type
- Move Chart Option

Activity (10 min)

Discuss 'Do It Yourself' activity in the class and later students will implement it in the computer lab.

Visual Aid (3 min)

Teacher shows Chart Design ribbon as given in the chapter.

Recapitulation (2 min)

- Which option changes chart type?
-

PERIOD 5: SWITCH ROW/COLUMN AND DATA RANGE

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Can we rearrange table rows and columns?

Content Explanation (25 min)

- Switch Row/Column Feature
- Select Data Option
- Updating Chart with New Data
- Understanding Source Data

Activity (10 min)

Discuss 'Do It Yourself' activities in the class and later students perform it in the computer lab.

Visual Aid (3 min)

Present the images and screenshots provided in the chapter.

Recapitulation (2 min)

- What happens when we switch row and column?
-

PERIOD 6: FORMAT TAB – BACKGROUND, COLORS & PATTERNS

Time: 45 minutes

Previous Knowledge Testing (5 min)

- How do we decorate charts and posters?

Content Explanation (25 min)

- Format Tab Introduction
- Changing Background
- Solid Fill, Gradient Fill, Pattern Fill, etc
- Changing Colors
- Formatting Data Series and Axis

Activity (10 min)

Discuss 'Do It Yourself' activities in the chapter and later implement them in the computer lab.

Visual Aid (3 min)

- Teacher shows the screenshots and images provided in the chapter.

Recapitulation (2 min)

- Which tab is used for formatting charts?
-

PERIOD 7: MOVING CHART

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Can we move pictures between pages?

Content Explanation (25 min)

- Move Chart Option
- New Worksheet for Charts
- Organizing Workbook

Activity (10 min)

Students perform the already discussed 'Do It Yourself' activities in the lab.

Visual Aid (3 min)

Present the images and draw the steps on the board.

Recapitulation (2 min)

- What is Move Chart used for?

LESSON PLAN
COMPUTER – A WONDER MACHINE
Class : VII

Chapter 4: INTERNET–HTML

LEARNING OBJECTIVES

After studying this chapter, students will be able to:

- Understand the meaning of Internet, Website and Web Page.
 - Explain URL, Home Page and Web Browser.
 - Differentiate between Client and Server.
 - Understand HTML and its features.
 - Identify Tags and Types of Tags (Paired & Unpaired).
 - Explain Structure of an HTML Document.
 - Create and view a simple HTML Web Page.
 - Use Basic HTML Tags like <HTML>, <HEAD>, <TITLE>, <BODY>.
 - Apply Formatting Tags–Bold, Italic, Underline, Superscript, Subscript.
 - Understand Heading, Paragraph and Line Break Tags.
 - Get introduction to CSS Styling.
 - Identify Web Browsers and HTML Editors.
-

PERIOD 1: INTRODUCTION TO INTERNET, WEBSITE AND WEB PAGE

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Do you use the internet at home or school?
- Name any website you know.

Content Explanation (25 min)

- Meaning of Internet – Network of Networks
- Website and Web Page
- Home Page
- URL (Uniform Resource Locator)
- Types of Content–Text, Images, Videos, Links

Activity (10 min)

Students perform ‘Do It Yourself’ activity—Open a favorite website and identify Home Page and URL in the lab.

Visual Aid (3 min)

Teacher shows example of a website on the projector.

Recapitulation (2 min)

- What is a website?
 - What is URL?
-

PERIOD 2: WEB BROWSERS AND CLIENT–SERVER CONCEPT

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Which browser do you use?

Content Explanation (25 min)

- Meaning of Web Browser
- Examples—Chrome, Edge, Firefox, Safari
- Client and Server Concept (Real-life examples)
- HTTP Protocol

Activity (10 min)

Students perform ‘Do It Yourself’ activity—List five client-server examples from daily life.

Visual Aid (3 min)

Browser window demonstration via projector.

Recapitulation (2 min)

- Who is a client?
 - Name two browsers.
-

PERIOD 3: INTRODUCTION TO HTML AND ITS FEATURES

Time: 45 minutes

Previous Knowledge Testing (2.5 min)

- Have you ever seen source code of a website?

Content Explanation (30 min)

- Full Form of HTML
- Need for HTML
- Features—Hyperlinks, Formatting, Easy Navigation
- Concept of Syntax

Visual Aid (10 min)

Teacher shows sample HTML code.

Recapitulation (2.5 min)

- What does HTML stand for?
-

PERIOD 4: TAGS AND STRUCTURE OF HTML DOCUMENT

Time: 45 minutes

Previous Knowledge Testing (5 min)

- What is grammar in language?

Content Explanation (25 min)

- Meaning of Tags, Angular Brackets
- Structure—<HTML>, <HEAD>, <TITLE>, <BODY>
- Types of Tags: Paired Tags vs Unpaired Tags
 - Create and View HTML document

Activity (10 min)

Students perform 'Do It Yourself' activity in the class.

Visual Aid (3 min)

Teacher draws the board diagram of HTML structure.

Recapitulation (2 min)

- Name two paired tags.
-

PERIOD 5: BASIC AND FORMATTING HTML TAGS

Time: 45 minutes

Previous Knowledge Testing (5 min)

- How do we make text bold in Word?

Content Explanation (25 min)

- Basic HTML tags
- Attributes of <BODY> tag
- <P>,
 Tags
 - , <I>, <U>
 - <SUP>, <SUB>

Activity (10 min)

Discuss 'Do It Yourself' activities in the class and later students will implement them in the lab or assigned as home task.

Visual Aid (3 min)

Present the relative codes provided in the chapter.

Recapitulation (2 min)

- Identify paired and unpaired tags.
-

PERIOD 6: HEADING TAG AND CSS INTRODUCTION

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you seen big and small headings?

Content Explanation (25 min)

- <H1> to <H6> Tags
- Introduction to CSS
- <STYLE> Tag
- Text Align and Colors

Activity (10 min)

- Discuss the given 'Do It Yourself' activity with the students in the class and later students will practise them on the computer.

Visual Aid (3 min)

Present the code along with the output on the board.

Recapitulation (2 min)

- How many heading levels are there?
-

PERIOD 7: WEB BROWSERS, HTML EDITORS

Time: 45 minutes

Previous Knowledge Testing (5 min)

Rapid oral quiz.

Content Explanation (25 min)

- HTML Editors – Notepad, Coffeecup
- Viewing Source Code
- Browser Components

Activity (10 min)

Students perform 'Do It Yourself' activities—Exploring Browsers and Editors—in the lab or assign them as an assignment after discussing them in the class.

Visual Aid (3 min)

Present HTML codes provided in the book.

Recapitulation (2 min)

- Name two HTML tags.
- What is CSS used for?

LESSON PLAN
COMPUTER – A WONDER MACHINE
Class : VII

Chapter 5: THE WORLD OF CANVA

LEARNING OBJECTIVES

After studying this chapter, students will be able to:

- Understand the meaning and purpose of Canva.
 - Explain why Canva is useful for students.
 - Create a Canva account and log in.
 - Identify the Canva Dashboard and its Panes and also understand different Design Types in Canva.
 - Create simple Poster, Presentation and Document by applying Basic Design Elements—Colors, Text, Images and Layout.
 - Use Text Formatting and Effects. Also, understand Color Theory Basics.
 - Work with Images and Editing Tools and create projects like Video and Website.
-

PERIOD 1: INTRODUCTION TO CANVA AND ITS USES

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you ever made a poster or chart?
- Do you like drawing or designing?

Content Explanation (25 min)

- What is Canva?
- Canva as a Digital Art Studio
- Why Canva is Useful
- Real-life uses—Posters, Projects, Presentations

Activity (10 min)

Students perform ‘Do It Yourself’ activity—Think about Design in the class.

Visual Aid (3 min)

- Show Canva posters or school designs.

Recapitulation (2 min)

- What is Canva?
 - Name one use of Canva.
-

PERIOD 2: GETTING STARTED WITH CANVA – ACCOUNT AND DASHBOARD

Time: 45 minutes

Previous Knowledge Testing (2.5 min)

- Have you ever created an email or app account?

Content Explanation (25 min)

- Steps to Create Canva Account
- Login Methods–Google / Email
- Canva Interface–Dashboard Overview
- Three Panes–Top, Left and Center

Visual Aid (15 min)

- Teacher shows Canva dashboard on projector.

Recapitulation (2.5 min)

- Name any two panes of Canva dashboard.
-

PERIOD 3: UNDERSTANDING DESIGN TYPES

Time: 45 minutes

Previous Knowledge Testing (2.5 min)

- What types of projects do you make in school?

Content Explanation (25 min)

- Presentation
- Poster
- Flyer
- Infographic
- Document
- Sheet
- Video
- Website

Visual Aid (15 min)

Show icons of different design types on board or via projector.

Recapitulation (2.5 min)

- Which design type is used for slides?
-

PERIOD 4: CREATING FIRST POSTER DESIGN WITH BASIC DESIGN ELEMENTS

Time: 45 minutes

Previous Knowledge Testing (5 min)

- Have you designed a birthday card?

Content Explanation (25 min)

- Detail explanation of creating a poster design
 - Basic Design Elements

Activity (10 min)

Students perform 'Do It Yourself' activity in the class.

Visual Aid (3 min)

Present the images and screenshots provided in the topic.

Recapitulation (2 min)

- Which option is used to start a new design?
-

PERIOD 5: TEXT FORMATTING

Time: 45 minutes

Previous Knowledge Testing (2.5 min)

- Why do we use different colors and fonts?

Content Explanation (25 min)

- Font Families–Serif, Sans-Serif, Decorative
- Text Effects–Bold, Italic, Underline, Shadow, Outline
- Text Spacing and Alignment

Visual Aid (15 min)

Teacher shows font styles, effects and spacing.

Recapitulation (2.5 min)

- Name two text effects.
-

PERIOD 6: COLORS AND WORKING WITH IMAGES

Time: 45 minutes

Previous Knowledge Testing (2.5 min)

- Which colors do you like most?

Content Explanation (25 min)

- Primary, Secondary and Complementary Colors
- Color Emotions
- Changing Backgrounds
- Image Sources–Free Photos, Graphics/Icons and Uploads
- Image Editing Tools–Crop, Filters, Brightness, Contrast, Transparency

Visual Aid (15 min)

- Teacher shows before/after image editing via projector or in the lab.

Recapitulation (2.5 min)

- What does the crop tool do?
-

PERIOD 7: CREATING DIFFERENT PROJECT TYPES

Time: 45 minutes

Previous Knowledge Testing (2.5 min)

- Have you made PPT or Word projects?

Content Explanation (25 min)

- Creating Presentation
- Creating Sheet (Planner)
- Creating Document
- Using Whiteboard
- Creating Video
- Building Website

Visual Aid (15 min)

- Teacher show demo via projector or in the lab.

Recapitulation (2.5 min)

- Which tool is used for mind maps?