Class 9

LESSON PLAN

Computer Applications

1. Basics of Information Technology

Teaching Objectives

Students will learn about

- Design of Computer
- Limitations of a Computer
- Components of a Computer System
- Units of Storage
- Computer Network
- Protocols
- Chat Sites
- Characteristics of a Computer
- Communication Technology
- Memory & Storage Devices
- Software
- Cloud Computing
- Multimedia
- Social Network

Teaching Plan

Number of Periods	
Theory	Practical
10	5

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Information Technology is the use of computers to gather, process, store, protect and transfer information. Modern computers are a storehouse of augmenting information.

A computer performs action and accomplishes its tasks in three basic stages namely: **Input**, **Process** and **Output**.

A program is a set of sequentially arranged instructions which directs the computer to process the input, in order to produce the required output or result.

A computer is a wonderful electronic machine and it has many significant features which make it a multi-purpose device. The special characteristics that make it such a popular and useful machine are:

- Speed
- Accuracy
- Reliability
- Storage Capacity
- Diligence
- Logical Ability
- Flexibility
- Transfer of Data

There are certain limitations of a computer which are given below:

- Apathetic
- Zero IQ
- Non-Heuristic
- Dependency

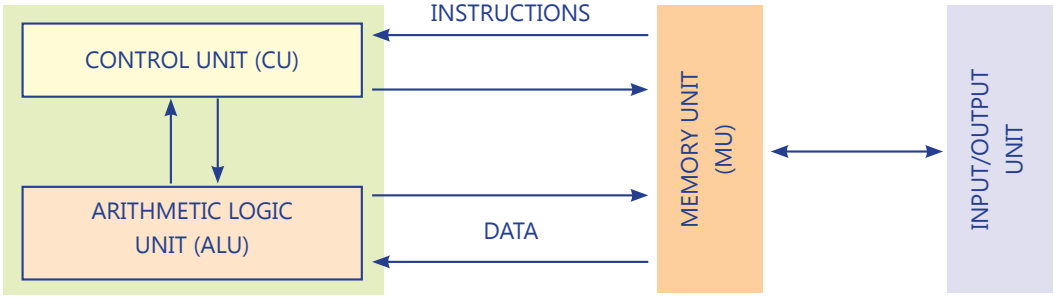
Communication refers to transfer of ideas or information from one place to another between different individuals. It means establishing links between places or people to share information and resources amongst each other.

Any sort of communication involves a sender, a receiver and a communication channel.

A computer system functions with the help of 'Hardware' and 'Software' components.

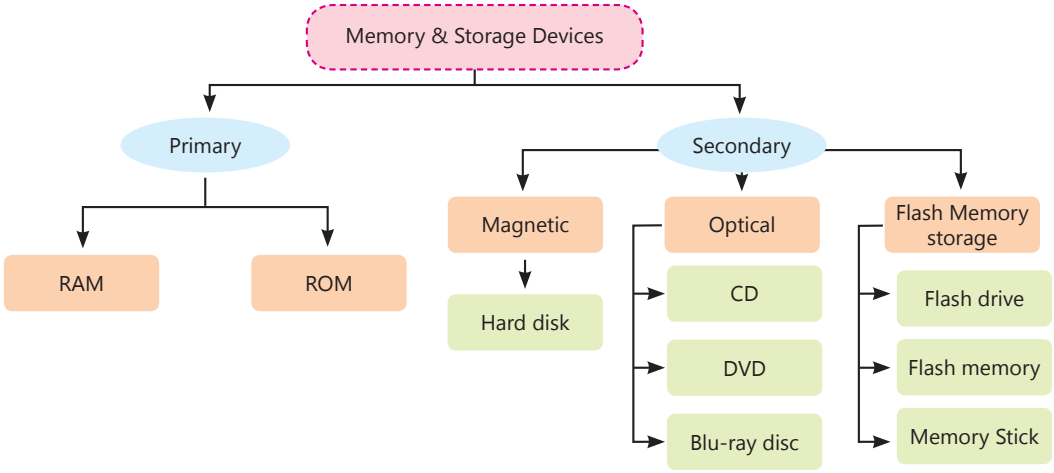
The physical components, which can be touched or felt are called the hardware components, whereas the components which cannot be touched or felt, such as instructions, data etc. form the software component of the system. Keyboard, Mouse etc. are hardware & MS Word, Windows etc. are software.

A CPU (Central Processing Unit) is also known as the 'Brain of a Computer'.



Define all the input and output device in detail with proper function, role and examples.

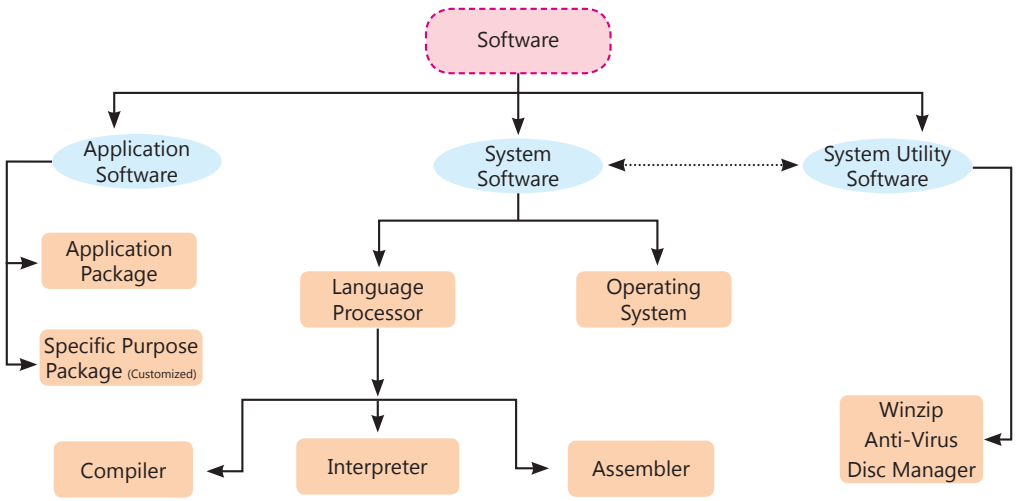
Memory, in context to a computer system refers to the location of storage of information. The CPU stores the data in the memory/storage device that can be used or retrieved whenever required.



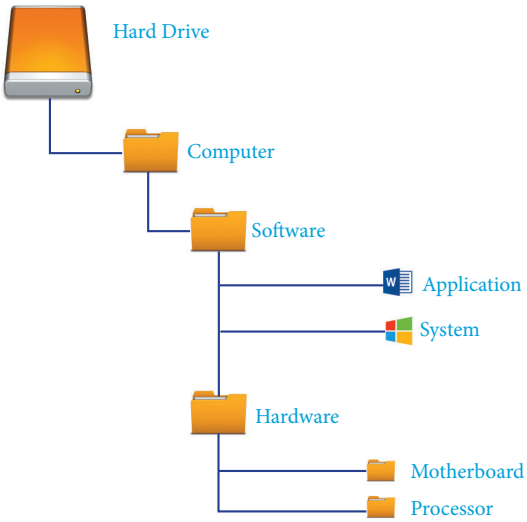
Storage of data is measured in multiples of bytes. Different units of storage of data are:

No. of bits/bytes	Equal to
8 Bits	1 Byte
1024 Bytes (B)	1 Kilobyte
1024 Kilobytes (KB)	1 Megabyte
1024 Megabytes (MB)	1 Gigabyte
1024 Gigabytes (GB)	1 Terabyte
1024 Terabytes (TB)	1 Petabyte
1024 Petabytes (PB)	1 Exabyte
1024 Exabytes (EB)	1 Zettabyte
1024 Zettabytes (ZB)	1 Yottabyte
1024 Yottabytes (YB)	1 Brontobyte
1024 Brontobytes (BB)	1 Geopbyte

A set of organized programs meant for specific purpose is known as 'Software'. Software is an intangible part of a computer which provides intelligence to the computer.



The arrangement of the files in the form of folders is known as 'File Management'.



A computer network is a link between two or more computers that are connected for the purpose of sharing of information and resources among themselves.

Based upon geographical area, networks can be classified into four broad categories:

- PAN
- LAN
- MAN
- WAN

Cloud computing refers to the usage of IT applications that are available on Cyber network but stored in a remote server.

Protocol refers to a set of common notions, norms or rules that coordinate or govern the functioning between two or more sets of computers or networks.

'Multi' means more than one or many and 'Media' means mode of communication. Thus multimedia means an integration of multiple media such as graphics, text, sound, videos, and animations in one set of file.

Also, define the components and uses of multimedia.

Chat Sites is a feature of Internet that enables instantaneous transmission of messages from the sender to receiver on Internet.

In computer, social networking refers to a network of several people interacting through computing device around the world on the internet. It is the network of people who form communities among themselves to share sentiments, relationships, ideas, topics of common interest, etc.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain the following:

a. Design of Computer
b. Characteristics of a Computer
c. Limitations of a Computer
d. Communication Technology
e. Components of a Computer System
f. Memory & Storage Devices
g. Units of Storage
h. Software
i. Computer Network
j. Cloud Computing
k. Protocols
l. Multimedia
m. Chat Sites
n. Social Network

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 48 to 52 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

2. Cyber Safety

Teaching Objectives

Students will learn about

- ☞ Cyber Safety
- ☞ Privacy
- ☞ Cyber Stalking
- ☞ Malware
- ☞ Password
- ☞ Confidentiality of Information
- ☞ Cybercrime
- ☞ Safety Measures to Prevent Malware

Teaching Plan

Number of Periods	
Theory	Practical
5	5

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Cyber safety is a measure to prevent or safeguard from cybercrimes or cyber attacks. It enables us to keep our personal information or data intact & secure and also protects organizations or individuals from unauthorised access or manipulation of information.

Also, explain the following with proper examples:

- Identity Protection
- Do not share Personal Information
- Avoid using Unsecured Wi-Fi
- Use Antivirus and Antispyware Software
- Install Firewall
- Data Stored in Web Browser
- Protect Username and Password
- Secure Online Transaction
- Don't Accept Unknown Invitation
- Clear Browser Cookies Frequently
- Never Install Software from Unknown Sources

A password can be termed as a key of codes that protect our valuable content, documents or files. It helps us to keep many of our belongings or documents secure or secret.

Privacy in Information Technology refers to personal control over one's own files and documents. It also refers to the right and ability to keep control over the information that one reveals or uploads over the internet.

Confidentiality refers to keep the data or information secret and allowing only authorized people to access the information.

Cyber stalking refers to the crime of using the Internet, e-mail, or other types of electronic communications to harass or threaten other people by following them online.

Cybercrime refers to misuse of data and resources on internet i.e., cyber stalking, identity theft, bank details theft, unauthorised access of computer or network (hacking), etc.

Malware refers to infectious programs that hampers the functioning of a computer system. It is unwanted software which is designed to damage a computer system. Some common types of malware are virus, worms, trojan horse, spyware, etc.

There are many remedial measures with which we can fight the viruses, spyware and other malware. There is a popular saying that, "Prevention is better than cure".

Extension

Ask the students some oral questions based on this chapter.

Q. Write a note on:

a. Cyber Safety
b. Password
c. Privacy
d. Confidentiality of Information
e. Cyber Stalking
f. Cybercrime
g. Malware
h. Safety Measures to Prevent Malware

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 68 to 72 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

3. Working with Word Processor

Teaching Objectives

Students will learn about

- Features of a Word Processor
- Working with 'Writer'
- Formatting the Document
- Grammar and Spell Check
- Inserting Date and Time
- Introducing Openoffice Writer
- Editing Text
- Bullets and Numbering
- Inserting Symbol
- Inserting Pictures

- ☞ Borders and Shadows
- ☞ Track Changes
- ☞ Drawing Toolbar
- ☞ Tables
- ☞ Mathematical Expressions
- ☞ Some Common Shortcuts

Teaching Plan

Number of Periods	
Theory	Practical
3	16

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

A word processing package is software that provides methods and mechanisms to type text and create documents. It allows editing, modifying, printing and saving the contents electronically making our work much easier.

Tell the students about the features of word processor:

- Editing
- Formatting
- OLE
- Find and Replace
- Interface
- Graphics
- Mail Merge
- Navigation between pages
- Spelling and Grammar
- Auto Complete

Introduce Open Office Writer to the students along with all the features in detail.

Explain working with Writer using labelled steps for:

- To create a new document
- To save a document with a new name
- To close a document
- To print a document
- To open an existing document
- To save an existing document
- To preview

Making changes in the existing text is known as 'Editing'. After entering text in a document, the user may wish to modify the contents. Editing of a document involves modifying, inserting, deleting the selected text of a document.

Edit menu provides various editing options like Undo, Redo, Cut, Select, Copy, Paste, etc., which help in modifying the contents of a document.

'Inserting Text' means insertion of text in a document.

Copying means duplication of certain contents of a document by pasting the copy of selected content to some other location in or outside a document.

The 'Cut' option helps to remove or cut the selected text from its original place. It can then be pasted at the same place or at a new place in the same or a different document.

Undo is an option that helps to retrieve (bring back) previously made modifications in a document or reverse the previous action or a series of actions.

The 'Redo' option helps to reverse the changes which were applied by 'Undo'. It cancels the 'Undo' action.

Changing the appearance of text or document to make it more prominent, attractive and appear as per user's requirement is referred to as Formatting.

It includes character formatting, paragraph formatting, page formatting, etc. Appearance of characters in different styles can be applied with different styles of font.

Bullet/Number refers to the 'marks' which can be inserted in a document to highlight certain line or to distinguish some points of text in a document when different lines or paragraphs have to be identified or have to be shown separately.

Spell check is an additional feature in 'Writer', which helps to check the spelling of different words in a document in two ways:

- Auto Spellcheck
- Spelling and Grammar

In word processor viz. Writer, different types of symbols, special characters, date and time can also be inserted in a document to make it more informative and presentable.

You can insert the following in your document:

- Date and Time
- Pictures
- Border and Shadows
- Tables
- Track Changes
- Mathematical Expressions

Explain some common shortcuts used in word processor:

Shortcut	Description
Ctrl+O	Opens a document
Ctrl+S	Saves the current document
Ctrl+N	Creates a new document
Ctrl+P	Prints the document
Ctrl+Q	Exits the application
Ctrl+X	Cuts the selected items
Ctrl+C	Copies the selected items
Ctrl+V	Pastes from the clipboard
Ctrl+Shift+V	Opens the Paste Special dialog
Ctrl+A	Selects all
Ctrl+Z	Undoes last action
Ctrl+Y	Redoes last action
Ctrl+Shift+Y	Repeats last command
Ctrl+F	Calls the Find and Replace dialog
Ctrl+J	Align Justify
Ctrl+E	Align Center
Ctrl+F	Find and Replace
Ctrl+Shift+P	Superscript

Ctrl+Shift+B	Subscript
Ctrl+L	Align Left
Ctrl+R	Align Right

Extension

Ask the students some oral questions based on this chapter.

Q. Write a note on the following:

a. Features of a Word Processor
b. Introducing OpenOffice Writer
c. Working with 'Writer'
d. Editing Text
e. Formatting the Document
f. Bullets and Numbering
g. Grammar and Spell Check
h. Inserting Symbol
i. Inserting Date and Time
j. Inserting Pictures
k. Borders and Shadows
l. Tables
m. Track Changes
n. Mathematical Expressions
o. Drawing Toolbar
p. Some Common Shortcuts

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 115 to 119 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

4. Working with Presentation

Teaching Objectives

Students will learn about

- Presentation
- Features of Impress
- Slide Layouts
- Saving the Presentation
- Viewing the Presentation
- Editing and Formatting a Slide
- Presentation Package
- Beginning with 'Impress' in Computer
- Creating a Presentation
- Template
- Working with Slides
- Adding Shapes

Teaching Plan

Number of Periods	
Theory	Practical
2	10

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Presentation is a way of systematic display of information. It includes pictures, texts, graphics, audio, videos and animated objects which are organized and presented in a proper sequence.

The basic terms used in presentation:

- Slide
- Handouts
- Speaker's Notes
- Outlines
- Masters
- Slide Show

The software that is used to organize and display information through text, pictures, figures, etc. is known as a Graphical Presentation Package.

Explain the use, interface and features of Impress to the students.

Slide layout refers to the basic look or the frame of types of slides in which contents can be added.

In 'Impress', there are various types of predefined layouts for creating slides which can be used for creating a new presentation. Some frequently used layouts are Title Slide, Content, Title-Only, Blank Slide, etc.

To create a new presentation, click on the 'New' button from the Standard Toolbar.

A 'Presentation Wizard' dialog box appears with the following three options, each of which can be selected to make a new presentation:

Empty presentation

From template

Open existing presentation

A new presentation can also be made with the help of existing template in 'Impress'.

The presentation can be viewed in six different modes, i.e., Normal, Outline, Notes, Handout, Slide Sorter and Slide Show View. The mode of the view can be switched with each other by clicking on the view buttons that lie on the top of the workspace.

Explain the working, editing, and formatting on a slide to the students.

Explain how to add a watermark and a shape to the students.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain the following:

a. Presentation
b. Presentation Package
c. Features of Impress
d. Beginning with 'Impress' in Computer
e. Slide Layouts
f. Creating a Presentation
g. Saving the Presentation
h. Template
i. Viewing the Presentation
j. Working with Slides
k. Editing and Formatting a Slide
l. Adding Shapes

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 143 to 148 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

5. Effects in Presentation

Teaching Objectives

Students will learn about

- ☞ Adding Multimedia Features in Slides
- ☞ Charts in Presentation
- ☞ Setting Timings for a Slide Show
- ☞ Inserting Speaker Notes
- ☞ Inserting Tables
- ☞ Animation in Presentation
- ☞ Grouping Objects
- ☞ Printing a Presentation

Teaching Plan

Number of Periods	
Theory	Practical
1	6

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

To make the presentation more effective and attractive, we can add multimedia features in the slides like:

- Inserting pictures
- Inserting tables
- Inserting media
- Charts in presentation

Animation facilitates the display of presentation of contents in a special sequence of typical effects leading to an interesting and a lively presentation.

Display of each slide in a presentation at a proper and specific time, (automatically by itself) makes the presentation more impressive. In 'Impress',

In Impress, different pictures and objects can be combined together to work and act as a single object. This process of combining the objects/pictures is known as 'Grouping'.

'Notes' view allows you to add reference or notes for your help to the slides in a presentation. In the notes view, the slides are displayed in a reduced form towards the upper side of the slides. At the bottom, a text box appears in which reference to the slide can be added.

Define the labelled step for the printing a presentation to the students.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain the following:

a. Adding Multimedia Features in Slides
b. Inserting Tables
c. Charts in Presentation
d. Animation in Presentation
e. Setting Timings for a Slide Show
f. Grouping Objects
g. Inserting Speaker Notes
h. Printing a Presentation

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 163 to 168 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

6. Working with Spreadsheets

Teaching Objectives

Students will learn about

- ☞ Features of a Spreadsheet Package
- ☞ Types of Data
- ☞ Entering Data in Worksheet
- ☞ Saving a Workbook
- ☞ Printing a Worksheet
- ☞ Navigation
- ☞ Formatting Cells
- ☞ Introducing Calc
- ☞ Creating a Workbook
- ☞ Moving in a Worksheet
- ☞ Opening an Existing Workbook
- ☞ Working with Workbook
- ☞ Editing in Worksheet
- ☞ Auto Fill

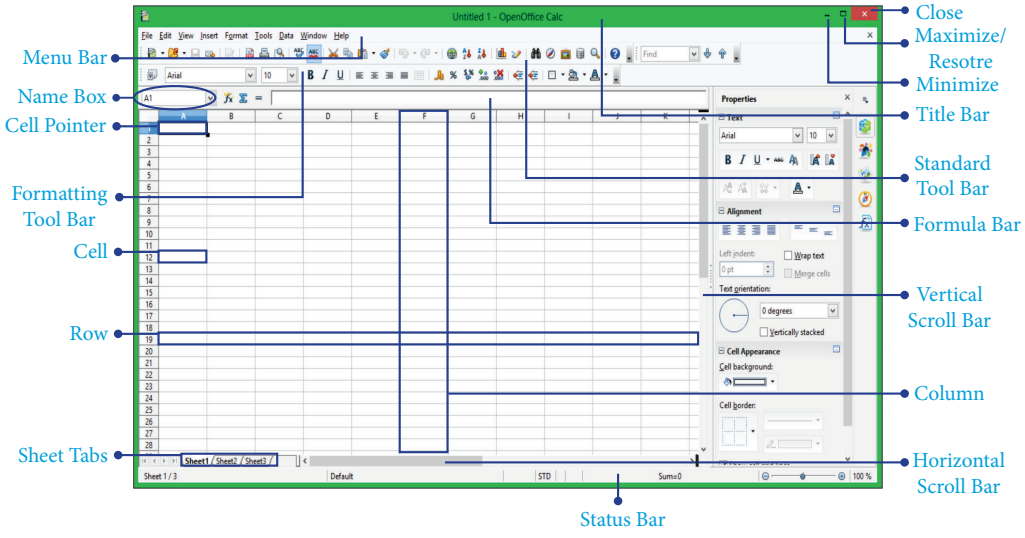
Teaching Plan

Number of Periods	
Theory	Practical
2	13

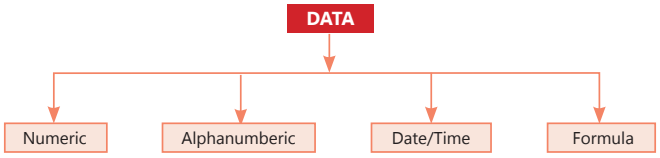
Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

A spreadsheet package accomplishes such tasks quickly and efficiently. A spreadsheet package is an application software that analyzes data with the help of graphs and charts and does analysis, calculations, comparisons, etc.

Introduce Calc and explain the features of Calc to the students.



Based on which type of data is being stored, data can be classified into numeric, alpha-numeric or text, date/ time and formula.



'Calc' opens with a new workbook named 'Untitled 1' as the default workbook where the user can begin to work.

To begin entering the data, click on the cell. While typing, the data can also be seen in the Formula bar.

To work in 'Calc', commands or data have to be entered with the help of input devices like mouse and keyboard in different cells of the worksheet. Following are some of the shortcuts for different actions in the worksheet.

If a workbook is saved for the first time, it must be assigned with a new file name. Tell the students in detail about saving a workbook, printing a worksheet, and closing it.

Explain the steps of the following to the students while working with workbook:

- Adding a sheet
- Deleting sheet
- Renaming sheet
- Moving sheet
- Hide/Unhide sheet
- Navigation

Explain the steps of the following to the students while editing in worksheet:

- Modifying cell content
- Inserting cells
- Deleting cells
- Cutting/copying and pasting content
- Inserting rows and columns
- Deleting rows and columns
- Hiding columns

Applying formatting in cells which includes:

- Alignment
- Font
- Autofill
- Custom list

Extension

Ask the students some oral questions based on this chapter.

Q. Write a short note on the following:

a. Features of a Spreadsheet Package
b. Introducing Calc
c. Types of Data
d. Creating a Workbook
e. Entering Data in Worksheet
f. Moving in a Worksheet
g. Saving a Workbook
h. Opening an Existing Workbook
i. Printing a Worksheet
j. Working with Workbook
k. Navigation
l. Editing in Worksheet
m. Formatting Cells
n. Auto Fill

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 192 to 194 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

7. Data Analysis

Teaching Objectives

Students will learn about

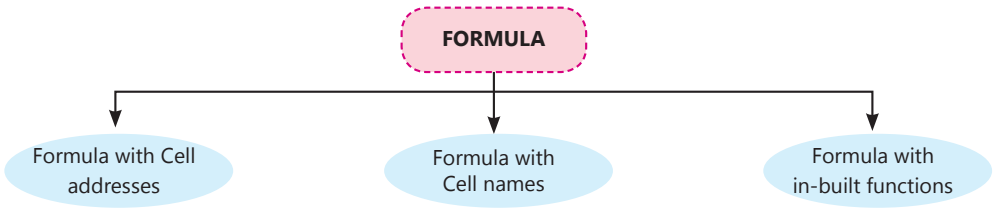
- ☞ Formulas
- ☞ Operator
- ☞ Common Errors
- ☞ Filter
- ☞ Cell Referencing
- ☞ Entering a Function in a Cell
- ☞ Sorting
- ☞ Charts and Graphs

Teaching Plan

Number of Periods	
Theory	Practical
1	10

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Formulas can be applied on a large data set to perform various mathematical operations such as addition, subtraction, division, multiplication and many more.



The identification or address of a cell in a formula is known as a 'Cell Reference'. There are three types of referencing in 'Calc'.

- Relative Referencing
- Absolute Referencing
- Mixed Referencing

An operator is a symbol that performs certain mathematical or logical operations. In a cell, the calculation takes place in the order of precedence of operators (in a similar way as BODMAS in mathematics).

Sometimes when we use wrong type of data, operand or operator in a formula, then error message gets displayed. Given below is the list of errors which commonly occur in 'Calc'.

Errors	Reasons
####	Occurs when the cell contains a number, data or time that is wider than the cell width or when the cell contains a date and/or time formula that produces a negative result.
#VALUE	Occurs when a wrong type of argument or operand is used.
#NAME	Occurs when 'Calc' does not recognize text in a formula.
#NUM	Occurs when there is a problem with a number in a formula or function.

#REF!	Occurs when a cell reference is not valid.
#DIV/0!	Occurs when a formula is divided by zero.

Sorting refers to the process of arranging data in ascending or descending order based on a certain criterion.

Filtering is a quick and easy way to get required information from the subset of data in a range of cells. A filtered range displays only such data that meet the criteria as specified for a field. In 'Calc' there are three options that help in filtering the range of data:

AutoFilter	It filters data according to specific value or string.
Standard Filter	It filters the data according to a given condition.
Advanced Filter	It does more advanced filtering, on the basis of specific criteria.

In spreadsheet package, there are additional features that help to represent information in the form of charts and graphs. It is a visual or graphical representation of data from a worksheet which is very useful for instant analysis and decision making.

X-Axis	It is the horizontal axis known as category axis.
Y-Axis	It is the vertical axis and is known as value axis. The X and Y axis divide the X-Y plane into four quadrants.
Data series	It is the set of values which the user wants to plot in the chart.
Chart Area	It refers to the total area surrounded by the chart.
Plot Area	It is that area of the chart in which the data is plotted. In a 2-D chart; axis bound the plot area whereas in 3-D charts, walls and floors bound the plot area.
Chart Title	It is the heading text that helps to identify the chart.
Axis Title	It refers to the titles given to three axis, i.e. X, Y and Z axis.
Legend	It helps to identify the plotted data series. Unique colour or pattern is helpful to identify such series.
Gridlines	It refers to the horizontal and vertical lines in the plot area. The gridlines are inserted in the chart to enhance its readability.
Data Label	It refers to the label that provides additional information about data marker, thus representing a single data item or value of a cell.
Walls and Floors	In a 3-D chart, the base area or the plane in X-Y axis is called the floor and the vertical areas, i.e. planes in X-Z and Y-Z axis are called walls.

Explain the types of chart:

- Line chart
- Column chart
- Bar chart
- Pie chart
- Scatter (XY) chart
- Area chart

Extension

Ask the students some oral questions based on this chapter.

Q. Write the short note on:

a. Formulas
b. Cell Referencing
c. Operator
d. Entering a Function in a Cell
e. Common Errors
f. Sorting
g. Filter
h. Charts and Graphs

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 216 to 219 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

8. Scratch

Teaching Objectives

Students will learn about

- ☞ Components of Scratch Screen
- ☞ Selecting a Sprite
- ☞ Sprite from File
- ☞ Editing a Sprite
- ☞ To Open an Existing Project
- ☞ Drawing a Sprite
- ☞ Resizing a Sprite
- ☞ Changing the Background

Teaching Plan

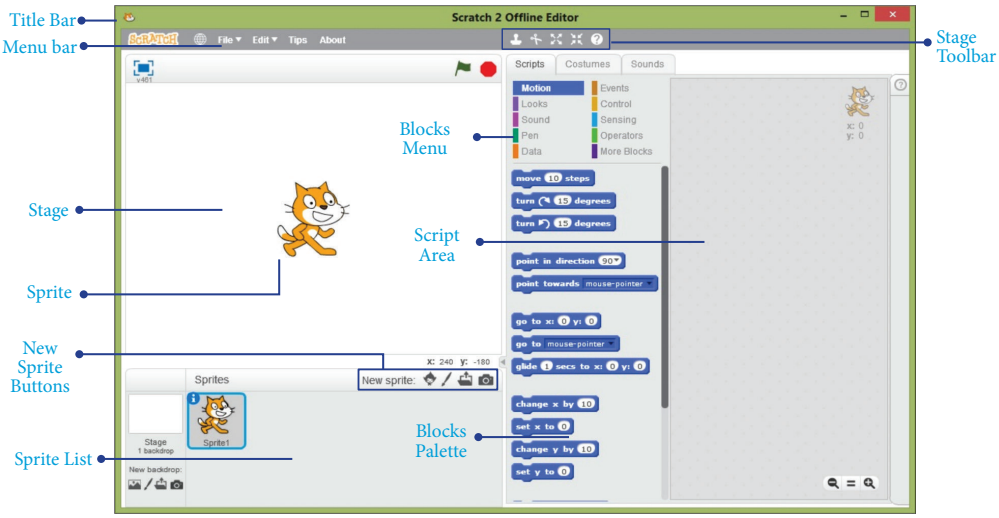
Number of Periods	
Theory	Practical
15	30

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Scratch is a freeware application software which helps us to create animations. It can be freely downloaded from scratch.mit.edu.

In 'Scratch', animation or projects are made by using an object or entity called a 'sprite'.

Explain the components of scratch windows to the students in detail.



Explain the steps to the students for the following:

- Open an existing project
- Sprite from file
- Changing the background
- Selecting a sprite
- Resizing a sprite
- Drawing a sprite
- Editing a sprite

Extension

Ask the students some oral questions based on this chapter.

Q. Write a short note on the following:

a. Components of Scratch Screen
b. To Open an Existing Project
c. Selecting a Sprite
d. Drawing a Sprite
e. Sprite from File
f. Resizing a Sprite
g. Editing a Sprite
h. Changing the Background

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 233 to 237 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

9. Animation in Scratch

Teaching Objectives

Students will learn about

- XY Plane
- Control
- Sensing
- Motion
- Looks
- Pen

Teaching Plan

Number of Periods	
Theory	Practical
15	30

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Animation is a feature in computer technology that helps to bring life to characters on screen.

The word 'Animation' is derived from the Latin word 'Anim' that means 'soul'.

In Scratch, there are some predefined tasks that help to animate the object or sprite.

XY Plane is a standard two-dimensional coordinate plane that can be used to identify the given position of an object. A coordinate system in a two-dimensional plane has two perpendicular axes or lines (the x-axis and y-axis).

Let us learn about some functions of programming blocks to understand XY position of a sprite on the stage.

Block	Function
go to x: 0 y: 0	Moves sprite to specified xy position.
glide 1 secs to x: 0 y: 0	Moves sprite to specified xy position according to the set time frame.
set x to 0	Changes position of sprite on its axis according to the specified position.
change x by 10	Changes position of sprite on x-axis by specified no. of steps.
x position	Shows x-axis position of sprite.
y position	Shows y-axis position of sprite.

The x-axis is the horizontal line on the coordinate plane. It enables LEFT-RIGHT movement. The y-axis is the vertical line on the coordinate plane. It enables UP-DOWN movement.

Define the meaning, purpose and use of motion block.

Control block contains two main programming blocks; 'Conditional block' and 'Loop block'.

Looks blocks contains the programming blocks that control the look of a sprite and display graphical effects.

Sensing block contains the programming blocks that enables to read the instructions given from input devices.

Explain about pen block and the role of it.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain the following:

a. XY Plane
b. Motion
c. Control
d. Looks
e. Sensing
f. Pen

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 249 to 252 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

10. Python

Teaching Objectives

Students will learn about

- ☞ Installing Python
- ☞ Character Set
- ☞ Variables
- ☞ General Layout of Python
- ☞ Working in Python
- ☞ Tokens
- ☞ Data Type
- ☞ Programs Using Separators with Print Function

Teaching Plan

Number of Periods	
Theory	Practical
30	60

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Python is an object-oriented high-level language. It is easy to learn and simple to use. Its syntax is in English language that helps a beginner or the programmer to focus on the logics rather than on repetitive use of syntax or the codes of the language.

Explain the features of Python and tell the students about the steps for installing the same.

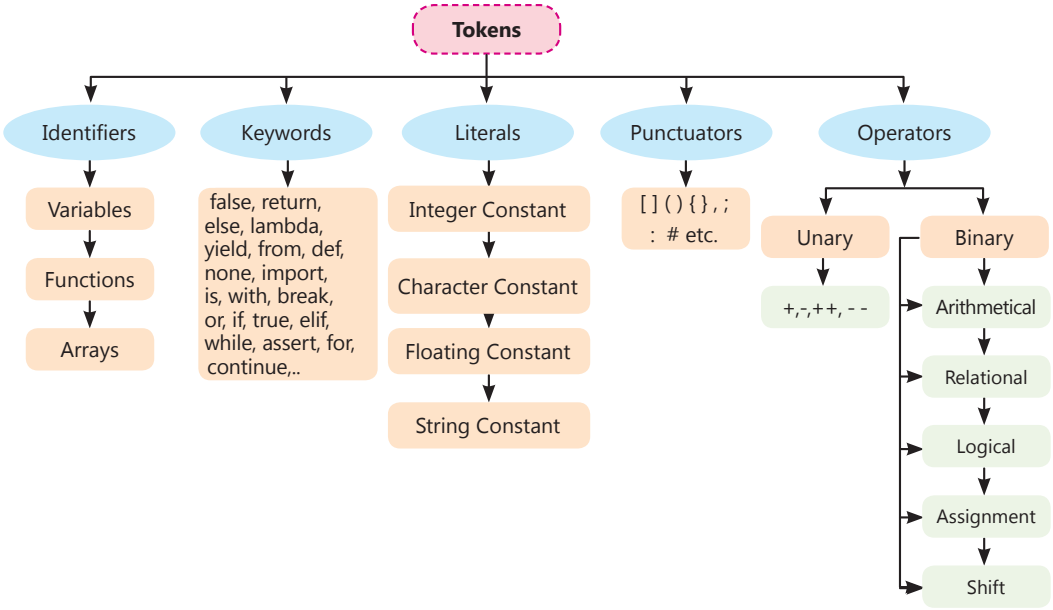
To write and run a Python program, Python interpreter must be installed in the computer. IDLE (GUI) is the standard 'Python Development Environment', to write the codes. IDLE is an acronym of Integrated Development Environment. T

he interactive interpreter of Python is called 'Python Shell'. It creates, debugs, runs and edits Python Programs from a single interface. There are two modes to work in Python:

- Interactive Mode
- Script Mode

Character set in Python consists of valid characters such as alphabets, digits or special characters that are recognized by the library of Python Language.

The smallest individual unit in a program is referred to as a 'Token'. Tokens are also known as Lexical Elements or Lexical Units. They can be categorised as:



Variables are the data or values which can change during the execution of a program. It is a name given to a location in memory in which the value is stored during the execution of a program.

Data types are the kind of data that is to be stored in the variables which is being used while writing a program.

Explain the general layout of the program:

- Documentation section
- Declaration section
- Commands or Statements
- Expression

Extension

Ask the students some oral questions based on this chapter.

Q. Define the following:

a. Installing Python
b. Working in Python
c. Character Set
d. Tokens
e. Variables
f. Data Type
g. General Layout of Python
h. Programs Using Separators with Print Function

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 269 to 273 in the main course book as **Solved Exercise** and **Unsolved Exercise**.