TRACKPAD

IT 402 OpenOffice

Teacher's Manual

Extended Support for Teachers

ORANGE
www.orangeeducation.in
www.thetouchpad.com

Teacher's Time Table

Periods / Days	0	I	II	III	IV	V	VI	VII	VIII
Monday									
Tuesday					B				
Wednesday					R				
Thursday					E				
Friday					A				
Saturday					K				

DEVELOPMENT MILESTONES IN A CHILD

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.

Age 5 - 8 Years	
Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/Social	• Self-esteem tends to rise • Peer groups emerge

Age 11 - 20 Years	
Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

"Family is the most important thing in the world."

Teaching Pedagogies

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

• Learning objectives

• Learning activities

• Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class:

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

During the class:

Present the lesson plan.

After the class:

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

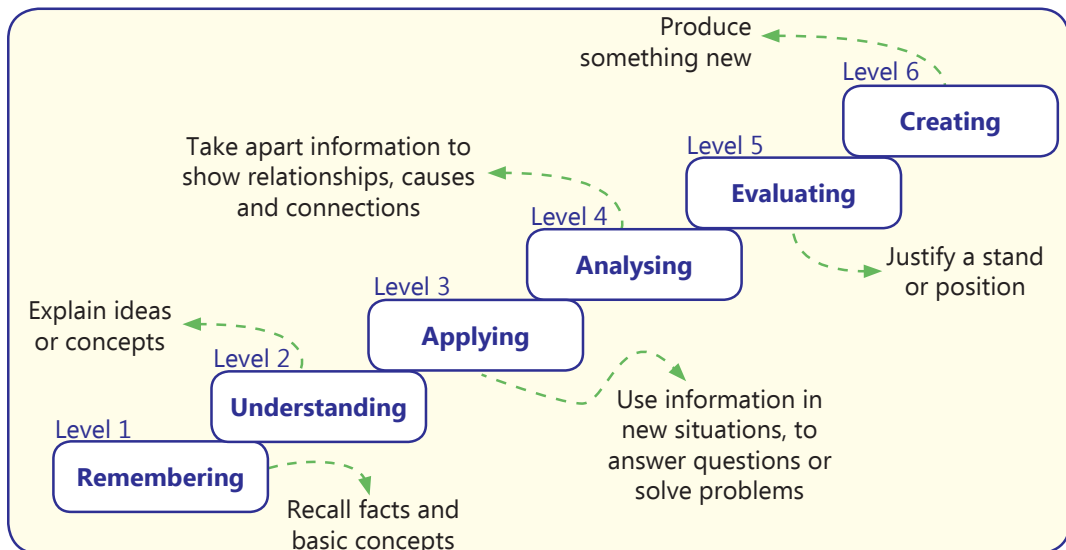"Knowing yourself is the beginning of all wisdom."

Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.

```
                    Direct
                  Instruction
    Performance                    Classroom
     Activities                    Discussion
                 ┌──────────┐
                 │ Effective│
     Student     │ Teaching │      Small
     Research    │Strategies│    Group Work
                 └──────────┘
       Problem                   Cooperative
       Solving                    Learning
```

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.

Produce something new

Level 6 — **Creating**

Take apart information to show relationships, causes and connections

Level 5 — **Evaluating**

Level 4 — **Analysing**

Justify a stand or position

Explain ideas or concepts

Level 3 — **Applying**

Level 2 — **Understanding**

Use information in new situations, to answer questions or solve problems

Level 1 — **Remembering**

Recall facts and basic concepts

Teachers should focus on helping students 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.

Part-A: Employability Skills

1. Communication Skills-II

Teaching Objectives

Students will learn about

- ☞ Communication
- ☞ Communication Cycle
- ☞ Impact of Body Language
- ☞ Effective Communication
- ☞ 7Cs of Effective Communication
- ☞ Measures to Overcome Barriers in Effective Communication
- ☞ Basic Writing Skills
- ☞ Parts of Speech

- ☞ Learning Objectives of Effective Communication
- ☞ Different Methods of Communication
- ☞ Feedback
- ☞ Principles of Effective Communication
- ☞ Barriers in Effective Communication
- ☞ What is a Sentence?
- ☞ Use of Articles

| Number of Hours |
| --- |
| Theory **10** |

Teaching Plan

While teaching this chapter, tell the students that the word 'Communication' comes from the Latin word 'Communicare', means 'to share'.

Share the learning objectives of effective communication with the students:

- Development of interpersonal skills
- Sending, receiving and understanding the message or information
- To express effectively with maximum efficiency.

Explain the communication cycle to the students and the phases it involves:

- Sender
- Message
- Encoding
- Communication Channel
- Receiver

Elements of Communication: Feedback, Sender, Ideas/Message, Encoding, Communication Channel, Receiver, Decoding
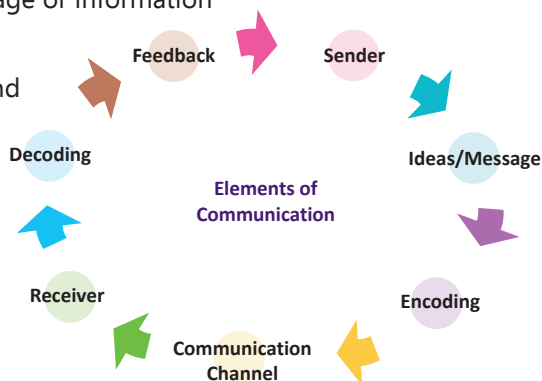
- Decoding
- Response/Feedback

Show the students the Methods and Types of Communication along with its advantages and disadvantages:

- Verbal Communication
- Non-Verbal Communication
- Visual Communication

Teach the students about the impact of Body Language and its Do's and Dont's.

Tell the students about the characteristics and importance of feedback and also teach types of feedback.

Teach them how to make an effective communication, its principles and 7Cs.

Define the types of barriers and measures to overcome barriers to the students in easy language for better understanding where:

Explain the following to the students with their proper purpose in detail:

- Sentence and its rules
- Phrase
- Parts of Sentence
- Parts of Speech
- Types of Sentences
- Articles and its uses

Ask the students to solve the task given on pages 29, 34 and 35 as **AI Task**.

Ask the students to read the **Brainy Fact** given on pages 22 and 31.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Communication?

Q. What are the method of communication?

Q. Explain communication cycle.

Q. What is the importance of feedback?

Q. Explain the barriers in effective communication.

Q. Explain the 7Cs of communication.

Q. Define:

    a. Sentence and its Kind
    b. Phrase
    c. Parts of Sentence

    d. Parts of Speech
    e. Articles
    f. Definite Articles

Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 39 to 47 in the main course book as **Exercise(Solved and Unsolved Questions) and Previous Years' Questions**.

Take the students to the computer lab and let them practice the activity given in **Lab Activity** section on page 47 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment Activity.

Ask the students to practice the activity in class given in **Class Activity** section given on Page 48 in the main course book. This will help the students to Communicate in a polite way and they will improve their writing skills and verbal skills.

Suggested Activity

Ask the students to go nearby market or shopping mall to observe how shopkeepers and salespersons are communicating.

2. Self Management Skills-II

Teaching Objectives

Students will learn about

☞ What is Stress?

☞ What is Stress Management?

☞ Steps to Manage Stress

☞ How can Students Manage Stress?

☞ How to Become Self-Reliant

☞ Stress Causing Agents

☞ Need of Stress Management

☞ Stress Management Techniques

☞ Working Independently

☞ Time Management and Its Importance

Number of Hours
Theory
(10)

Teaching Plan

While teaching this chapter, tell the students that self-management is the modus of applying and using one's self characteristics in a righteous and responsible way.

Introduce the students to Stress and also explain them how to manage stress & work independently.

Share the agents that causes stress with the students in details:

- Mental
- Physical
- Social
- Financial

Tell the students what measure are to be followed to reduce stress:

- Physical Exercise
- Time Management
- Yoga
- Meditation
- Enjoyment
- Vacation
- Nature Walks

Explain the following to the students in detail:

- What is stress management?
- Need of stress management
- Steps to manage stress

- Stress Management Techniques
- How can students manage stress?
- Work independently
- How to become self-reliant?

Share the information about self-awareness to the students which are further divided into external and internal.

Tell the students about self-motivation and how to get motivated while using real life examples.

Explain the meaning of self-regulation to the students.

Tell the students about time management and its importance. Also, tell four steps for Effective Time Management.

Ask the students to solve the task given on pages 51, 55 and 56 as **Task**.

Extension

Ask the students some oral questions based on this chapter.

Q. What is self-management?

Q. What is stress?

Q. What measure can be taken to reduce stress?

Q. What is self-awareness?

Q. What is self-motivation?

Q. What is self-regulation?

Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 59 to 64 in the main course book as **Exercise(Solved and Unsolved Questions) and Previous Years' Questions**.

Take the students to the computer lab and let them practice the activity given in **Lab Activity** section on page 64 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment Activity.

Ask the students to practice the activity in class given in **Class Activity** section given on page 65 in the main course book. This will help the students to understand the importance of all Self Management.

Suggested Activity

Ask the students to make their monthly time-table and set daily targets to prepare for the board examinations.

3. ICT Skills-II

Teaching Objectives

Students will learn about

- ☞ Computer System— Introduction
- ☞ Windows 10 Operating System
- ☞ What is a Folder?
- ☞ Computer Care and Maintenance
- ☞ Preparing Maintenance Schedule
- ☞ Increasing Computer Performance
- ☞ Protecting Computer against Viruses
- ☞ What are Temporary Files?

- ☞ Operating System
- ☞ What is a File?
- ☞ Creating and Managing Files and Folders
- ☞ Cleaning Computer Components
- ☞ Creating a Backup of Your Data
- ☞ Removing Spam Email from Your Computer
- ☞ Protecting Your Data

Number of Hours
Theory
10

Teaching Plan

Tell the students about that a computer system is a combination of hardware and software components that help in doing the required task.

Teach them about three types of software.

Tell the students that an operating system refers to the set of programs that provides an interface to use the resources of computer system effectively and efficiently.

Explain the important functions of operating systems and where it is commonly used to the students.

Teach the students that windows 10 is a Graphical user interface operating system developed by Microsoft in 2015. Also tell them about components of its Desktop.

Explain the following to the students in detail.

- What is a file?
- What is a folder?
- Creating and managing files and folders
- Computer care and maintenance
- Cleaning computer components
- Preparing maintenance schedule
- Creating a backup of your data
- Increasing computer performance
- Removing spam email from your computer

- Proctecting computer against viruses
- Protecting your data
- What are temporary files?

Ask the student to solve the exercise given on pages 71 and 81 as **Quiz Bee**.

Ask the students to read the **Pure Fact** given on pages 71, 72, 77 and 79.

Extension

Ask the students some oral questions based on this chapter.

Q.   How does operating system act as a messenger between hardware and application program?

Q.   Differentiate between CUI and GUI.

Q.   What is Network OS?

Q.   Write any four (4) functions of OS.

Q.   What is a file?

Q.   What is a file system?

Q.   Give any four (4) points to be kept in mind while cleaning the computer.

Q.   How we can create a backup of our data?

Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 87 to 89 in the main course book as **Exercise (Solved and Unsolved Questions) and Previous Years' Questions**.

Take the students to the computer lab and let them practice the activity given in **Lab Activity** section on pages 89 to 90 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment Activity.

Ask the students to practice the activity in class given in **Class Activity** section given on Page 90 in the main course book. This will help the students to know the working of computer.

Suggested Activity

Ask the students to create a word file on any of the following topics:

- Linux
- Disk Operating System
- Windows Operating System
- Mobile Operating System

4. Entrepreneurial Skills-II

Teaching Objectives

Students will learn about

☞ Entrepreneurship and Society   ☞ Work Done by an Entrepreneur

☞ Qualities of an Entrepreneur   ☞ Functions of an Entrepreneur

☞ Role of an Entrepreneur   ☞ Importance of Entrepreneurs

☞ Myths/Misconceptions about Entrepreneurship

☞ Entrepreneurship as a Career Option

> **Number of Hours**
> Theory
> **15**

Teaching Plan

While teaching this chapter, tell the students that entrepreneur is a person who makes his own business in an innovative manner and bears all the risk in the hope of gaining much profit and contributing to the economy of the country.

Tell them about entrepreneurship and society.

Teach them about the work done by an Entrepreneur.

Explain the qualities of entrepreneurs to the students.

- Hard Working
- Optimistic
- Independent
- Energetic
- Self-Confident
- Perseverant

Define the functions of an entrepreneur in detail with the students:

- Entrepreneurial Functions
- Promotional Functions
- Managerial Functions
- Commercial Functions

Show the role and importance of an entrepreneur to the students.

Explain the myths/misconceptions about entrepreneurship.

Define the entrepreneurship as a career option to students in detail.

Ask the students to solve the task given on page 97 and 100 as **Quiz Bee**.

Ask the students to read the **Pure Fact** given on page 97.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain myths about entrepreneurship.

Q. Define entrepreneurship as a career option.

Q. When is entrepreneurship successful?

Q. How does entrepreneurship play an important role in the life cycle of society?

Q. List the qualities of an entrepreneur.

Q. What are the functions of an entrepreneur?

Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 101 to 105 in the main course book as **Exercise(Solved and Unsolved Questions) and Previous Years' Questions**.

Take the students to the computer lab and let them practice the activity given in **Lab Activity** section on pages 105 and 106 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment Activity.

Ask the students to practice the activity in class given in **Class Activity** section given on page 106 in the main course book. This will help the students to know about entrepreneurs and how to become an entrepreneur.

Suggested Activity

Ask the students to make a power point presentation on Successful Entrepreneurs of India.

5. Green Skills-II

Teaching Objectives

Students will learn about

☞   What is Sustainable Development?

☞   Importance of Sustainable Development

☞   Problems Related to Sustainable Development

☞   Challenges to Sustainable Development

☞   Sustainable Development Goals— Agenda 2030

☞   Sustainable Development Initiatives in India

☞   Our Role in Sustainable Development

Number of Hours
Theory
5

Teaching Plan

While teaching this chapter, tell the students that humans interact with the environment to get food, water, fuel and many other things. It is very important for the survival of all our lives.

Define sustainable development to the students and importance of sustainable development.

Explain the problems related to sustainable development to the students.

Explain the following challenges to sustainable development in detail:

Explain the meaning of Sustainable Development Goals – Agenda 2030 in detail:

- Goal 1
- Goal 2
- Goal 3
- Goal 4
- Goal 5
- Goal 6
- Goal 7
- Goal 8
- Goal 9
- Goal 10
- Goal 11
- Goal 12
- Goal 13
- Goal 14
- Goal 15
- Goal 16
- Goal 17

Tell the students that the Government of India has started many policies at the central level and state level in the direction of achieving SDGs. Some of these Sustainable Development Initiatives in India are:

- Swachh Bharat Mission
- Beti Bachao Beti Padhao
- Pradhan Mantri Awas Yojana
- Smart Cities
- Pradhan Mantri Jan Dhan Yojana
- Pradhan Mantri Ujjwala Yojana

Explain our role in sustainable development which are:

- Quality Education
- Clean Water and Sanitation
- Affordable and Clean Energy
- Decent Work and Economic Growth
- Reduced Inequalities
- Sustainable Cities and Communities
- Responsible Consumers and Producers
- Protect Life Below Water
- Protect Life on Land

Ask the student to solve the exercise given on page 111 as **Quiz Bee**.

Ask the students to read the **Pure Fact** given on page 109.

Extension

Ask the students some oral questions based on this chapter.

Q. Name any 10 sustainable development goals.

Q. Give another name for Sustainable goals.

Q. What is sustainable development?

Q. What is the importance of sustainable development?

Q. What are the problems related to sustainable development?

Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 113 to 118 in the main course book as **Exercise (Solved and Unsolved Questions) and Previous Years' Questions**.

Take the students to the computer lab and let them practice the activity given in **Lab Activity** section on page 118 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment Activity.

Ask the students to practice the activity in class given in **Class Activity** section given on Page 118 in the main course book. This will help the students to know about the importance of Sustainable Development.

Suggested Activity

Ask the students to make poster on any one of the Sustainable Development Goals.

Part-B: Subject Specific Skills

1. Digital Documentation (Advanced)

Teaching Objectives

Students will learn about

☞ Styles
☞ Using Drawing Toolbar
☞ Create and Use Template
☞ Defining the Hierarchy of Headings

☞ Insert and Use Images
☞ Change Properties For Drawing Objects
☞ Create and Customise Table of Contents
☞ Mail Merge

Number of Periods	
Theory	Practical
12	18

Teaching Plan

While teaching this chapter, tell the students word processing package helps in creating, editing, formatting, modifying, printing and storing the contents of a document.

Tell the students about **Styles** while demonstrating the steps involved in the following:

- Styles and Formatting Window
- Fill Format Mode
- Creating New Styles from Selection
- Creating New Style by Drag and Drop Method
- Updating Styles from Selection

Let the students know how to insert and use images. Tell them that an image can be inserted in the following ways:

- Using Drag and Drop Method
- Using insert Menu
- Inserting an Image Using Copy-Paste Option (Using Clipboard)
- Inserting an image using a Scanner

Make the students aware of using Drawing Toolbar.

Explain to the students how tochange properties for drawing objects.

Let the students know that a template is a predefined layout or a blueprint of a document with saved formatting features like font styles, logos, borders, colour pattern, text design, etc. Tell them how to create and use template, like:

- Using an Existing Template
- Creating a Template
- Setting a Custom Template as a Default Template
- Resetting the Default Template
- Changing to a Different Template
- Updating a Document Template

Let the students know how to create and customise table of contents.

Make the students aware of defining the hierarchy of headings.

- explain to the students that Mail merge
- is an important feature of any word processor document. It is the process of merging a main document with the data source file to create form letters that can be invitations, letters, mailing labels or printing certificates for several people.

Extension

Ask the students some oral questions based on this chapter.

Q.   What is style?

Q.   What actions can you perform on a style?

Q.   How can you insert an image in Writer?

Q.   What is Drawing toolbar?

Q.   What is the use of the Drawing Object Properties toolbar?

Q.   Explain template.

Q.   How can you modify a default template?

Q.   What defines the hierarchy of headings in a document?

Q.   What is mail merge?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 181 to 189 in the main course book under Exercise.

Ask the students to try Competency-based/Application-based questions given on pages 185 and 188 to imbibe elements like communication, and leadership & responsibility in them.

Ask the students to try CLASS ACTIVITY given on page 190 to inculcate communication and collaboration skills.

Take the students to the computer lab and let them practise the LAB ACTIVITY given on page 190 of the main course book. It will enhance the ability of the students and will serve as a leadership & responsibility, and creativity activity.

Suggested Activity

Ask the students to make a presentation on the topic "Application of IT"

2. Electronic Spreadsheet (Advanced)

Teaching Objectives

Students will learn about

☞ Data Consolidation

☞ Using WHAT-IF Scenarios

☞ Using Solver

☞ Cell Reference

☞ Sharing Worksheet Data

☞ Adding Comments to Changes

☞ Comparing Documents

☞ Creating Subtotals

☞ Goal Seek Analysis

☞ Linking Data and Worksheets

☞ Working with Hyperlinks in a Sheet

☞ Record Changes in a Spreadsheet

☞ Merging Worksheets

☞ What are Macros?

Number of Periods	
Theory	Practical
8	10

Teaching Plan

While Wteaching this chapter, tell the students that Data is one of the most important sources for analyzing or getting proper information.

Explain the **Consolidating Data** to the students and the steps involved in combining cell contents with labelled screenshots.

Discuss with the students about the use of **Subtotal**. Also, share the steps involved in using the creating the same.

Share with the students the purpose of **What If Analysis** and the steps involved in using the tools like scenario.

Demonstrate to the students about the purpose of using **Goal Seek** and the various components:

● Formula Cell

● Variable Cell

● Target Value

Explain the objective of Solver in detail to the students and demonstrate the steps involved in its use.

Demonstrate to the students about the purpose of Link Data and Spreadsheets and steps involved in:

● Setting up Multiple Worksheets

● Renaming a Sheet

● Deleting an Existing Sheet

Discuss with the students the use of Cell Reference and the steps involved in:

- Adding a Cell Reference Using a Mouse
- Adding a Cell Reference Using a Keyboard
- Cell Reference Using Another Workbook

Share with the students the purpose of using Hyperlink and also explain what is:

- Relative Hyperlink
- Absolute Hyperlink

Also share the working with hyperlink in a sheet with the students.

Demonstrate to the students how **Sharing a Document** can be done and the functions that can be performed on the same.

Let the students know how to record changes in a spreadsheet.

Make the students aware of adding comments to changes.

Explain to the students about merging worksheets. Tell them the steps to merge documents.

Let the students know that macros is the process of saving the sequence of commands or keystrokes by a specific name for the later use. Make them aware of the steps for creating a macro.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the meaning of consolidating the data?

Q. What is the use of subtotal?

Q. What is the purpose of What If analysis?

Q. What is Goal Seek and Solver?

Q. What is Cell Reference used for?

Q. What is a Hyperlink?

Q. How can a shared spreadsheet opened and saved?

Q. How can worksheets be merged?

Q. What are the steps to compare documents?

Q. What are macros?

Q. What are the advantages of using Macros?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 252 to 262 in the main course book under Exercise.

Ask the students to try Competency-based/Application-based questions given on pages 256 and 259 to imbibe elements like communication, and leadership & responsibility in them.

Take the students to the computer lab and let them practise the LAB ACTIVITY given on page 262 of the main course book. It will enhance the ability of the students and will serve as a leadership & responsibility, and creativity activity.

Suggested Activity

Ask the students to create a simple electronic spreadsheet to calculate the total expenses for a monthly budget.

3. Database Management System

Teaching Objectives

Students will learn about

- ☞ Database
- ☞ Relational Database Management System (RDBMS)
- ☞ Steps to Create a Table
- ☞ Data Types in Database
- ☞ Inserting a New Record in a Table
- ☞ What are Relationships?
- ☞ Steps for Creating Queries
- ☞ What is a form?
- ☞ Elements of a Database

- ☞ Database Objects
- ☞ Referential Integrity
- ☞ What is a query?
- ☞ Structured Query Language(SQL)
- ☞ What is a Report?

Number of Periods	
Theory	Practical
18	27

Teaching Plan

While teaching this chapter, tell the students that data is a collection of values in the form of text, numbers, dates, images, audio, video, etc.

Discuss the importance of databases in organizing and managing large amounts of data efficiently.

Explain to students that a database is a structured collection of data, and a database management system (DBMS) is software used to manage databases.

Introduce the concept of a database and its role in storing, organizing, and retrieving data.

Explain the elements of a database, including tables, fields, records, and keys.

Relational Database Management Systems (RDBMS) (10 minutes)

Discuss the concept of a relational database and its advantages in organizing data into related tables.

Introduce popular RDBMS software such as MySQL, Microsoft Access, or Oracle.

Demonstrate the process of creating a table in DBMS software.

Explain the steps involved, such as defining table structure, assigning field names, and specifying data types.

Teach students about different data types commonly used in databases, such as text, numbers, dates, and Boolean.

Explain the importance of choosing appropriate data types to ensure data accuracy and efficiency.

Introduce the concept of database objects, such as tables, queries, forms, and reports.

Explain the purpose and functionality of each database object.

Demonstrate how to insert a new record into a table in the DBMS software.

Show students how to provide values for each field in the record.

Explain the concept of referential integrity and its importance in maintaining data consistency in a relational database.

Teach students how to establish relationships between tables using primary and foreign keys.

Explain the concept of relationships between tables and their significance in connecting related data.

Introduce the concept of queries and their use in retrieving specific data from tables based on specified criteria.

Introduce SQL as a standard language used to communicate with and manipulate databases.

Teach students basic SQL commands for creating tables, inserting records, and querying data.

Explain the purpose and functionality of forms in DBMS software.

Demonstrate how to create a form to provide an intuitive and user-friendly interface for data entry and retrieval.

Introduce the concept of reports in DBMS software and their use in presenting and analyzing data in a structured format.

Demonstrate how to create a simple report based on selected data from tables.

Summarize the key points covered in the lesson, emphasizing the importance of databases and DBMS in managing and manipulating data effectively.

Encourage students to explore and practice using DBMS software to further develop their database skills.

Extension

Ask the students some oral questions based on this chapter.

Q. What is data?

Q. What is OpenOffice Base?

Q. What is the purpose of a wizard?

Q. What are field properties?

Q. How would you define a table in a database?

Q. What is a query?

Q. What is a form in a database?

Q. What is a report in a database?

Q. What is sorting in a database?

Q. How do relationships in a database help retrieve data?

Q. What is OpenOffice Base and what type of DBMS is it?

Q. What is the purpose of a wizard in database management?

Q. What is the purpose of a query in a database?

Ask the students to solve the questions given on pages 269, 281, 284, and 302 as **Quiz Bee**.

Ask the students to read the **Pure Fact** given on page 265.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 325 to 332 in the main course book as **Exercise (Solved and Unsolved)**.

Ask the students to try Competency-based/Application-based questions, and Previous Years' questions given on pages 332 to 335 to imbibe elements like communication, and leadership & responsibility in them.

Take the students to the computer lab and let them practice the activity given in the **LAB ACTIVITY** given on page 336 of the main course book. It will enhance the ability of the students and will serve as leadership & responsibility, and creativity activity.

Suggested Activity

Ask the students to design a relational database schema for a library management system, including tables, relationships, and key constraints.

4. Web Applications and Security

Teaching Objectives

Students will learn about

☞ Types of Impairment

☞ Computer Accessibility

☞ Accessibility Options in an Operating System

☞ Networking Fundamentals

☞ Internet

☞ Getting Access to Internet Through Internet Service Providers

☞ Data Transfer on the Internet

☞ Steps to Check for Active Internet Connection

☞ Concept of Instant Messaging(IM)

☞ Etiquettes to be Followed While Chatting

☞ Chatting Using Yahoo Messenger

☞ Creating and Publishing Web Pages (Blog)

☞ Using an Offline Blog Editor

☞ What is Online Transaction?

☞ What is Internet Security?

☞ Antivirus

☞ General Guidelines for Managing Strong Passwords

☞ What is a Firewall?

☞ Clearing Data Stored in Browsers

☞ Maintain Workplace Safety

☞ What is First Aid?

☞ Prevent Accidents and Emergencies

☞ Emergency

☞ Protecting Health and Safety At Work

☞ Case Studies of Hazards/Accident due to Situations Avoidable

☞ How to Keep Your Workspace Safe

Number of Periods	
Theory	Practical
15	22

Teaching Plan

While teaching this chapter, tell the students that the resources of web application which has evolved out of information technology, has revolutionized humans to a great extent.

Discuss the importance of digital skills and internet safety in today's interconnected world.

Explain to students that the lesson will cover topics related to impairments, computer accessibility, networking, internet usage, online communication, website creation, internet security, workplace safety, and basic first aid.

Introduce different types of impairments, such as visual, hearing, mobility, and cognitive impairments.

Explain the importance of computer accessibility for individuals with impairments.

Discuss various accessibility options available in an operating system to assist individuals with impairments.

Demonstrate how to access and utilize accessibility options in an operating system.

Introduce the basics of networking, including concepts like LAN (Local Area Network) and WAN (Wide Area Network).

Explain the role of routers, switches, and IP addresses in network communication.

Teach students about the internet, its purpose, and how it functions.

Explain the concept of internet service providers (ISPs) and their role in providing internet access.

Discuss the different methods of data transfer on the internet, such as email, file transfer protocols (FTP), and cloud storage.

Explain the importance of data privacy and security during data transfer.

Introduce the concept of instant messaging (IM) and its use for real-time communication.

Teach students about proper etiquette and guidelines to follow while chatting online.

Demonstrate how to create and publish web pages using blogging platforms or website builders.

Show students how to use an offline blog editor to create and format content.

Discuss the importance of internet security and protecting personal information online.

Introduce concepts like online transactions, antivirus software, strong passwords, and firewalls.

Explain the concept of workplace safety and its importance in maintaining a healthy work environment.

Teach students about general guidelines for managing strong passwords, clearing data stored in browsers, and maintaining a secure workspace.

Introduce the concept of first aid and its importance in emergency situations.

Demonstrate basic first aid techniques, such as treating minor cuts, burns, and sprains, and how to handle emergencies.

Summarize the key points covered in the lesson, emphasizing the importance of digital skills, internet safety, workplace safety, and basic first aid.

Encourage students to practice responsible internet usage, maintain workplace safety, and be prepared to provide basic first aid assistance if needed.

Extension

Ask the students some oral questions based on this chapter.

Q.   What is computer accessibility?

Q.   How does networking facilitate resource sharing and remote access?

Q.   What is a server in the context of computer networking?

Q.   What does the acronym BLOG stand for and what is its purpose?

Q.   What are offline blog editors used for?

Q.   What is an online transaction?

Q.   Give examples of services that can be purchased through online transactions.

Q.   What is internet security and its role?

Q.   Define a firewall and its purpose in network security.

Q.   What is the importance of workplace safety?

Q.   What is first aid and when is it provided?

Q.   How would you define an accident?

Q.   What does workspace evacuation entail?

Q.   What does healthy living encompass?

Ask the students to solve the questions given on pages 343, 351, 370, and 375 as **Quiz Bee**.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 318 to 391 in the main course book as **Exercise (Solved and Unsolved)**.

Ask the students to try Competency-based/Application-based questions, Previous Years' questions, and Video-based questions given on pages 390 to 392 to imbibe elements like communication, and leadership & responsibility in them.

Take the students to the computer lab and let them practice the activity given in the **LAB ACTIVITY** given on page 392 of the main course book. It will enhance the ability of the students and will serve as leadership & responsibility, and creativity activity.

Suggested Activity

Ask the students to identify possible security risks in a web application and suggest ways to protect it from those risks in an A-4 size sheet.