

Information Technology

Subject Code 402



Windows 11 and OpenOffice



Foreword

In today's era of digital revolution, technology stands as the driving force, propelling our daily lives forward. It profoundly influences every facet of our existence, shaping the way we interact with one another, conduct our work, and engage in the process of learning. It is not merely a domain of technical expertise; rather, it represents an essential skill for individuals of all backgrounds.

Acknowledging this pivotal role of Information Technology, the National Education Policy (NEP), 2020 underscores the necessity of instilling practical IT competencies in school curricula, ensuring that students are well-prepared for the challenges of the 21st century.

On that note, Uolo is proud to present a two-book series dedicated to Information Technology (Subject Code H02), and meticulously designed for students of grades 9 and 10. This series goes beyond delivering theoretical knowledge as it also fosters the development of hands-on experience in IT skills.

These books are meticulously crafted to align seamlessly with the most up-to-date CBSE curriculum, presenting the material in a lucid manner. Within these pages, students will discover all the resources they need to excel in both theoretical and practical IT examinations.

Our books encompass all the prescribed CBSE learning objectives and introduce students to the foundational principles of digital documentation, spreadsheets, presentations, database management, and internet security. Moreover, these volumes incorporate units that nurture essential employability skills and vocational proficiencies among students.

We hope that this series becomes a trusted companion on your educational journey, empowering you to attain academic excellence and equipping you to seize the opportunities offered by the modern world.

Key Elements – A Quick Glance

Important points to aid memory and recall.

Remember

There is an electrical contact made when a key is pressed. These electrical signals are sent in coded form to a microcontroller, which then relays them to the computer, describing the character that matches that key.

Common misconceptions with clear solutions.

Error Alert!

The IT industry primarily involves programming and coding. In reality, IT encompasses a wide range of activities, including hardware, software development, cybersecurity, networking, and more. It's a diverse field with various career opportunities beyond coding.

Fun facts related to the topic, included to captivate students' interest.

Did You Know?

Usually, some of the keyboards on laptops do not have a numeric keypad on the right side.

Unit-end point-wise summary to consolidate concepts.

Things to Remember

- Data entry is the process of transcribing information or entering physical data into an electronic device, such as a computer, through data entry or input devices.
- Touch typing is done using a standard QWERTY keyboard with the hands placed at a starting location called the home row keys.
- There are generally 14 punctuation marks used in the English language.

Important terms to ensure a firm grasp of important concepts.

Key Terms

Keyboarding Skills: The ability to touch, type, or input data through the keyboard smoothly while typing is called keyboarding skills.

Alphabet Keys: There are 26 alphabet keys on the keyboard. They are marked from A to Z.

Number Keys: There are 10 number keys on a keyboard, numbered from 0 to 9.

Modifier Keys: A modifier key is a key that modifies the action of another key when pressed simultaneously. These are used in combination with other keys to perform any action.

Classroom and laboratory-based group and individual activities for an enhanced learning experience.

Activity Time

Activity 1: Making a Chart

Prepare a chart on the role of IT in everyday life. Include examples of how IT impacts daily activities, such as online shopping, social media, and e-learning.

(Individual Work)

Activity 2: Preparing Case Study

(Individual Work)

Analyse a real-world case study on the implementation of IT in a business or government service. Identify the benefits and

Chapter-end exercises containing objective and subjective questions to enable comprehensive practice of concepts.

Chapter Checkup

A Select the correct option.

1. What does IT stand for in the context of modern education?
a) International Technology
b) Innovative Techniques
c) Innovative Technologies

Reference list of viva questions to better prepare for oral examinations.



Viva-Voce Questions

- Define the role of the ISP in IT-BPM.
Ans. Internet Service Providers (ISPs) provide internet connectivity and services, forming the backbone of the IT-BPM industry by enabling online communication and data transfer.
- What is LMS?
Ans. LMS stands for Learning Management System. It is a digital platform that streamlines the administration,

Recommended list of practical questions for active learning.



List of Practicals

Practical Work

1. Create a Writer document to represent the role of IT in Healthcare services.

2. Type the following using your left hand:

Start were extra red seat scatter abstract feast tax vegetable desert car safe cease wave egg verb brag acre scarf

Sample paper, adhering to CBSE guidelines, to ensure preparedness for theoretical exams.

Sample Paper

SECTION A: OBJECTIVE TYPE QUESTIONS

- Q1. Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)
- Which of the following element is not a part of non-verbal communication?
A) Gestures B) Eye contact
C) Verbal calls D) Silence
 - "Hurray! We won the match." Which type of sentence is this?
A) Assertive B) Exclamatory
C) Imperative D) Interrogative
 - _____ is one of the first and oldest ICT tools.
A) Radio B) Email
C) Smartphones D) Tablets

Detailed projects that promote the application of knowledge.

Projects

Project 1: Create a document in Writer and perform the following actions:

- Create the following table and format it.
- Enter the days of your birthday month.
- Make 11 copies of this table and enter the days of all the months of the current year.
- Save the document with the title "Yearly Calendar".

MONTHLY CALENDAR

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY

Solutions to unsolved questions to support independent practice and learning.

Answer Key

- A 1. b 2. c 3. c
B 1. Call centres 2. Medical 3. Back office
C 1. True.

Syllabus

	UNITS	No. of Hours for Theory and Practical	Max. Marks for Theory and Practical	
Part A	EMPLOYABILITY SKILLS			
	Unit 1: Communication Skills-I	10	2	
	Unit 2: Self-management Skills-I	10	3	
	Unit 3: ICT Skills-I	10	1	
	Unit 4: Entrepreneurial Skills-I	15	3	
	Unit 5: Green Skills-I	05	1	
Total		50	10	
Part B	SUBJECT SPECIFIC SKILLS	Theory	Practicals	Marks
	Unit 1: Introduction to IT-ITeS industry	2	4	4
	Unit 2: Data Entry and Keyboarding Skills	4	10	6
	Unit 3: Digital Documentation	10	26	10
	Unit 4: Electronic Spreadsheet	18	35	10
	Unit 5: Digital Presentation	10	31	10
Total		44	106	40
Part C	PRACTICAL WORK			
	Practical Examination		15	
	• Written Test		10	
	• Viva Voce		10	
Total			35	
Part D	PROJECT WORK/FIELD VISIT			
	Practical File/ Student Portfolio		10	
	Viva Voce		05	
	Total		15	
	Grand Total	200	100	

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Part-A

Employability Skills

1

Methods of Communication

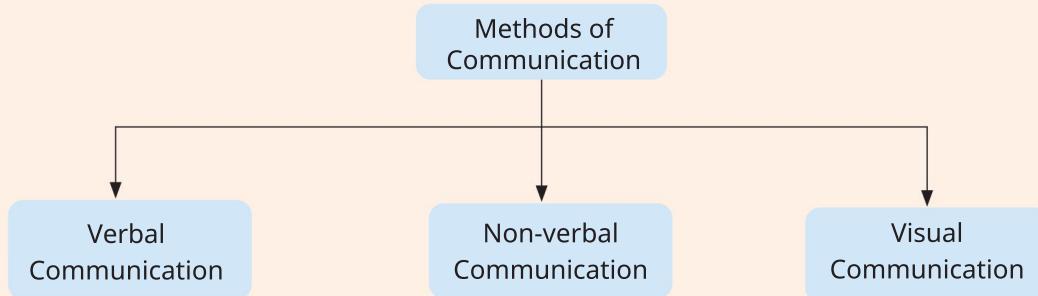
Communication is the essence of our interconnected world. It is the means through which information, ideas, and emotions flow from one person to another, from one organisation to another, and across the huge digital landscapes that define the 21st century. It is an essential aspect of human interaction and plays a fundamental role in our personal, professional, and societal lives.

The word ‘communication’ originated from the Latin word ‘*commūnicāre*’, which means ‘to share’. Therefore, communication can be defined as the way or process of sharing information, thoughts, feelings, or messages between individuals or groups using various methods, mediums, and channels. It functions as a bridge that links us through words, actions, and even visuals.

Methods of Communication

Imagine attempting to express oneself without words or trying to thrive in a world where one cannot convey ideas or understand the thoughts of others. Scary, isn’t it?

Methods of communication are like the pipeline through which knowledge, emotions, and intentions are shared, allowing us to collaborate, learn, and connect at a deeper level. For effective communication to take place, mankind uses a balance of verbal, non-verbal, and visual forms of communication.



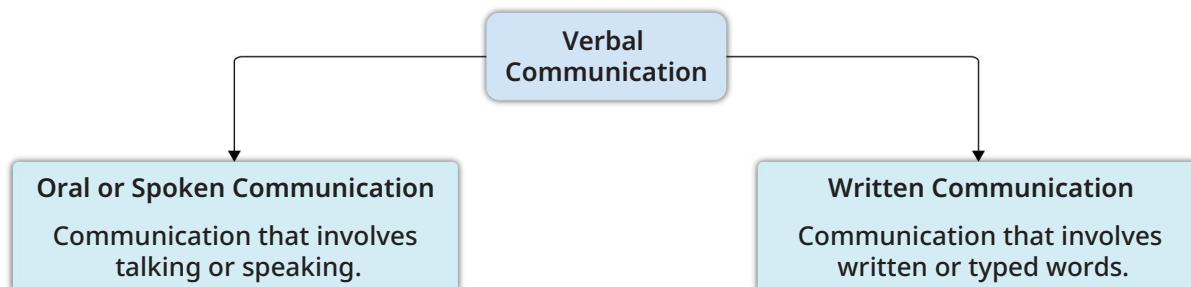
Error Alert!

Communication Methods Are Rigid: Communication methods keep evolving over time. Assuming that what worked in the past will always be effective can lead to outdated and inefficient communication strategies.

Verbal Communication

Verbal communication is a powerful and dynamic method of sharing ideas, thoughts, and information using spoken or written words. The use of language in verbal communication allows us to accurately and effectively express ourselves, engage in conversations, and convey messages to others. Verbal communication plays a pivotal role in our day-to-day interactions and interactions with the world around us.

There are two types of verbal communication: **Oral or Spoken Communication** and **Written Communication**.



Oral Communication Oral communication, a subset of verbal communication, refers to the exchange of information through spoken words. It involves conversations, discussions, presentations, and speeches that occur face-to-face or through various electronic devices like phones, video platforms, or radios. When we engage in oral communication, we depend on our voice, tone, pitch, and volume to convey meaning and emotion. From casual chats with friends to important business meetings, oral communication allows us to connect and share ideas directly with others.

Types of Oral or Spoken Communication		
Face-to-face conversations 	<p>It is when you can physically see and listen to the person/people you want to communicate with in front of you.</p> <p>It also includes small group communication when a group of people connect/collaborate to discuss a matter.</p> <p>Each participant contributes to the communication process.</p> <p>Public speaking, too, is a part of face-to-face conversations where one person talks to others while trying to persuade or convince them of something.</p>	<p>Rohan and Tina have met at Rohan's house to discuss a project.</p> <p>Rohan, Tina, Yogesh, and Shalu connect to discuss the roles and responsibilities for their group project.</p> <p>Kashika gives a speech on 'Green and Clean Environment' in school assembly.</p>
Video/phone conversations 	<p>It is when you communicate through a phone or any other device.</p> <p>Whether used for personal or professional reasons, phone or video conversations play a crucial role in maintaining connections, even when physical distance separates us.</p>	<p>Ms Sarika works as an Academic Content Developer for an EdTech firm. She connects with her colleagues working from another state through video-conferencing tools.</p>

Factor of Effective Oral Communication Effective oral communication involves several key parameters:

Pace	Speaking at a comfortable speed, neither too fast nor too slow.
Fluency	Speaking smoothly and without stumbling over words.
Choice of words	Using appropriate words and clear language for the audience.
Volume	Speaking at a suitable volume so that the listener can hear clearly.
Clarity	Pronouncing words clearly with proper stress to ensure understanding.
Tone	Using the right tone to convey emotions and intent. It can be friendly, formal, persuasive, and so on.

Think and Tell

1. Which one do you think is easier, small group face-to-face conversations or large group face-to-face conversations?
2. Are there any other examples of oral or spoken communication that you can think of?

Written Communication In contrast to oral communication, written communication entails utilising written language to share information. This form of communication includes various forms such as emails, letters, articles, social media posts, and text messages. When we use written communication, we put our thoughts into words that others can read and understand. Written communication is essential when the sender and receiver are in physically distant places or when documentation of the conversation is needed.

For written communication to be effective, one needs to use clear and concise language, organise information in a logical way, and tailor one's communication according to the preferences, level of understanding, knowledge, interests, and expectations of the audience.

The various types of written communication are explained below.

Types of Written Communication		
Letters 	<p>Letters are written, typed, or printed messages that are enclosed in envelopes and sent through postal services. They serve as a formal or informal means of communication, suitable for various purposes.</p>	Rashi lives in New Delhi. She wrote a letter to her grandmother living in Kerela to inform her of her life events.
SMS 	<p>An SMS, or a short message service, is a modern way of communicating through text messages on mobile phones. These messages are usually quick and to the point, making them ideal for sending brief updates or information. They can be sent to multiple people at the same time.</p>	Rohan is able to track the delivery of his new shirt through the SMS that he receives from the delivery company.

(continued...)

Types of Written Communication

Emails 	<p>Email stands for electronic mail, which is the electronic form of a letter. It is sent through a computer via a network.</p> <p>Emails can be used for official or personal purposes. They offer a convenient way to share personal or professional news, thoughts, documents, and more.</p>	<p>Rajneet works for Infotechnology Company. He sends emails to all the clients, wishing them 'Happy Dusshera'.</p>
Books, newspapers, and magazines 	<p>Books, newspapers, and magazines are written forms of communication intended for a large audience.</p> <p>They are used to inform, educate, and entertain people from various walks of life.</p>	<p>Rakesh reads newspaper to keep himself up-to-date with the events around the world.</p>

Advantages of Verbal Communication

Ease and speed	<p>Verbal communication is often quick and straightforward. It allows you to express your thoughts, ideas, and questions in real-time, and you can receive an immediate response. This is particularly beneficial in situations where prompt communication is essential. For instance, face-to-face conversations or phone calls can quickly convey important information or resolve issues.</p>
Adaptability	<p>Verbal communication offers flexibility in adapting your message based on the responses of the person you're communicating with. You can adjust your tone, words, and even your approach as the conversation unfolds. For example, if you're explaining a concept to someone and notice confusion, you can modify your explanation to make it clearer.</p>
Communicating to the masses	<p>Verbal communication is efficient when sharing ideas with a larger audience. Public speeches, classroom teaching, and media such as books, magazines, and newspapers enable dissemination of information to many people simultaneously. This allows for mass education, entertainment, and awareness campaigns.</p>
Emotional expression	<p>Verbal communication allows individuals to convey their emotions, feelings, and attitudes effectively through tone of voice, intonation, and choice of words. This emotional aspect can enhance the impact of a message.</p>

Disadvantages of Verbal Communication

Cultural barriers	<p>A significant challenge in verbal communication arises from cultural differences. Different cultures have their own languages, expressions, and accents. These distinctions can lead to misunderstandings, misinterpretations, and even offence. Therefore, it is crucial to navigate these barriers to ensure effective communication.</p>
Language and clarity	<p>Verbal communication heavily relies on choosing the right words. If words are not carefully selected or used incorrectly, the message's meaning can become unclear. Miscommunication can occur from using vague or unfamiliar terms, leading to confusion among participants.</p>
Non-verbal elements	<p>Although verbal communication involves spoken words, it's important to note that non-verbal elements (such as facial expressions, gestures, and tone of voice) play a significant role in conveying meaning. A mismatch between verbal and non-verbal cues can lead to mixed messages or misunderstandings.</p>
Limited to auditory sensory channel	<p>Verbal communication relies solely on the auditory channel, which means it may not be accessible to or effective for individuals with hearing impairments.</p>

Think and Tell

1. Can you list out the different types of oral, spoken, and written communication?
2. Give two advantages and disadvantages of verbal communication.

Non-verbal Communication

Non-verbal communication is a way of sending messages without using words. This implies the ability to interact with others without the use of spoken or written language. Instead, it involves using facial expressions, hand signals, body postures, stances, and various gestures.

Hence, we can define non-verbal communication as the type of communication that does not involve words. It involves sharing signals and messages with others through expressions, gestures, and body language.

Non-verbal communication involves **expressions, posture, gestures, touch, space, eye contact, and paralanguage**. Understanding the aspects of non-verbal communication can help us be better communicators. Using the right gestures and expressions while speaking helps us get our point across. Such understanding also aids us in understanding our audience's reaction and altering our behaviour or communication accordingly.

Being professional at work requires that we be aware of appropriate gestures and postures. If noise, distance, etc. interfere with spoken communication, we can communicate using hand gestures to get our message across. For example, putting a finger on the lips signals that silence is required.

Did You Know?

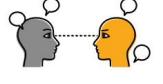
It has been observed that in our daily communication, information is constantly being shared and perceived through body movements (face, arm movements) and voice control (volume, tone, pauses), which are non-verbal in nature.

Think and Tell

1. Have you ever played a game of dumb charades? What are the various ways in which you communicate in the game? Discuss with your teacher.
2. Have you ever felt confused when someone's expression did not match their spoken words?

Types of Non-verbal Communication	How to Use Non-verbal Communication Effectively?
Facial expressions 	<p>Facial expressions convey the emotional state of a person to others. For example, people smile when they are happy or frown when they are upset.</p> <p>Maintain a calm expression. Be subtle and neutral. Align expression to words being spoken. Maintain eye contact.</p>
Gestures 	<p>Gestures are a form of non-verbal communication used to express an idea or meaning through the movement of parts of the body, especially the hands or the head. For example, nodding of the head indicates agreement and understanding. Waving at others indicates a greeting.</p> <p>It is important to keep in mind that it is considered impolite to use your finger to point at someone. Try placing your hands by your sides instead of in your pockets when you're having a conversation. Show that you are paying attention by nodding your head slightly when conversing or listening.</p>

(continued...)

Types of Non-verbal Communication		How to Use Non-verbal Communication Effectively?
Posture 	<p>Postures refer to the stances individuals maintain while they are either standing or sitting. A posture often plays a role in conveying our confidence or mood.</p> <p>For example, a confident person stands with their back straight, and a person with hands on their heads suggests exhaustion.</p>	<p>Keeping your upper body relaxed and shoulders straight signifies confidence.</p> <p>Sitting cross armed can be perceived as defensive or closed off.</p> <p>Keep your arms relaxed and open to signal openness and receptiveness.</p>
Touch 	<p>Physical contact such as a handshake or a pat on the back is a form of non-verbal communication.</p> <p>For example, as a kind of encouragement, sports coaches often pat their players on the back.</p>	<p>It is important to keep in mind that your touch does not make the other person uncomfortable.</p> <p>In professional settings, scratching your nose or hair is considered impolite.</p>
Space 	<p>It is the amount of physical distance that exists between people when they are talking. It depends on their relationship with each other and the situation.</p>	<p>It is important to maintain proper distance with the person you are communicating with, depending on the formal or informal nature of your relationship with them.</p>
Eye contact 	<p>Maintaining eye contact while conversing shows interest and makes the other person feel that you are paying attention.</p> <p>Avoiding eye contact can sometimes signal that you are not paying attention.</p>	<p>It is important to remember to maintain an optimum level of eye contact and have relaxed body language.</p> <p>It is important to not make the person you are communicating with uncomfortable.</p>
Paralanguage 	<p>It is a form of non-verbal communication that includes things like volume, tone, and pace of speaking.</p> <p>Speaking too quickly can indicate anxiousness or eagerness. Speaking slowly might convey seriousness.</p>	<p>It is important to take care of our volume, tone, and pace while speaking in professional settings.</p> <p>It is especially important to maintain a moderate volume and pace.</p>

Advantages of Non-verbal Communication	
Gives clarity	It helps to give clarity and enhance understanding in communication as it makes the message clearer and more understandable.
Replacement to verbal communication	In situations where verbal communication is not possible or appropriate, non-verbal cues become the primary means of conveying information.
Tool for emotional expression	They are a powerful tool for expressing emotions. Facial expressions, body language, and tone of voice allow individuals to convey their feelings more clearly.
Help to handicapped people	<p>Non-verbal communication can also be useful for handicapped people who cannot speak or hear properly.</p> <p>They use sign language and facial expressions instead of talking or hearing, respectively.</p>

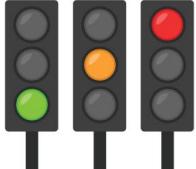
Disadvantages of Non-verbal Communication	
Lead to confusion	Non-verbal cues can be interpreted in many ways. A gesture or facial expression may have different meanings in different contexts and cultures.
Incomplete communication	Nonverbal communication cannot convey all types of information. Important details and facts need to be coupled with verbal means, which are more comprehensive.
Conflicting cues	In cases where verbal and non-verbal communication may conflict with each other, there may be room for confusion for the receiver.
Absent in distant communication	Non-verbal cues are less effective or absent in cases of long-distance communication, such as phone calls or online messaging.

Visual Communication Visual communication is when we use pictures, symbols, and designs to share ideas and information. It is like sending a message without using words but by using things like signs, logos, captivating writing styles, drawings, and even moving pictures or animations.

Imagine if you are taking a car ride and you see a sign of a man working. That indicates that there is some construction work going on ahead.

Therefore, visual communication can be defined as the use of visual components, such as signs, logos, drawings, graphic design, illustrations, animations, etc., to share ideas and information.

Following are some of the most common examples of visual communication:

A traffic sign that instructs drivers not to honk their horns.		A symbol for pausing a video or music file on a computer or smartphone.	
Sign for the women's and men's restrooms.		Traffic lights that signal Red for Stop, Yellow for Wait, and Green for Go.	
Sign for flammable substances.		Indication of a railway crossing.	

Think and Tell

Can you tell other examples of visual communication that you commonly see around you?

Advantages of Visual Communication

Makes meaningful	Use of graphics, diagrams, charts, or models makes communication effective and purposeful.
Easy comprehension	Support of visual aids makes information easy to understand.
Attention grabbing	Visual communication, when coupled with verbal communication, makes it more appealing and attention-grabbing.

Disadvantages of Visual Communication

Lack of details	Visuals may lack the depth and detail necessary to fully understand complex concepts or provide comprehensive information.
Costly	Some visual aids used for visual communication may be expensive.
Subjectivity	Interpretation of visuals can be personal and may vary from person to person. What is clear to one person may be ambiguous to another.

Differences Between Verbal, Non-verbal, and Visual Communication

Basis	Verbal Communication	Non-verbal Communication	Visual Communication
Meaning	Involves using spoken or written words to convey messages and information.	Conveys meaning through facial expressions, gestures, body language, and other non-verbal cues.	Relies on visual elements, such as symbols, images, and design, to communicate ideas and concepts.
Use of language	Requires the use of language, including grammar and vocabulary.	Does not use language directly but involves elements like tone, volume, and pace.	May or may not use language, but uses visual cues and elements to convey messages.
Forms	Face-to-face conversations, phone calls, speeches, and written documents.	Facial expressions, gestures, posture, eye contact, and touch.	Logos, posters, comics, product packaging, and illustrations.
Medium	Utilises spoken words, written documents, phones, and computers.	Utilises body language, facial expressions, gestures, and physical presence.	Utilises images, graphics, videos, and animations.
Example	Writing an email or giving a speech.	Nodding head or shaking hands.	Logo of a brand.

Activity Time

Activity 1: Pros and Cons of Verbal and Non-verbal Communication

(Group Work)

In a small group of 4–5 students, choose and discuss any one type of communication. Converse on the advantages and disadvantages of the chosen form of communication.

On an A3 size sheet, list the advantages and disadvantages discussed. You may make it creative and display it in the class.

Activity 2: Common Body Language Mistakes

(Group Work)

Form groups of 4–5 students and engage in discussion on the dos and don'ts of body language that should be followed in a formal and informal setting.

To make the presentation interesting, you can create a small skit displaying the good and bad body language in different scenarios.

Chapter Checkup

A Select the correct option.

- 1 What is the medium of verbal communication?
 - a To use pictures and symbols
 - b To exchange information through spoken or written words
 - c To communicate using only gestures
 - d To convey emotions through facial expressions

- 2** Which of the following is an example of non-verbal communication?
- Writing an email
 - Speaking on the phone
 - Smiling, to express happiness
 - Sending a text message
- 3** Visual communication involves:
- Using only written words
 - Sharing information through spoken words
 - Using pictures, symbols, and designs
 - Using gestures and body language
- 4** Which of the following is not a form of visual communication?
- Nodding head
 - Logo
 - Poster
 - Charts

B Fill in the blanks with the most suitable words.

- communication occurs when we talk or write using words.
- Non-verbal communication involves expressions, gestures,, touch, space, eye contact, and paralanguage.
- is a planned and organised act of talking to a large group of people to share information, influence, or entertain them.
- Visual communication uses pictures, symbols, and to share ideas and information.

C State whether the following is *True* or *False*. Correct the statements that are false.

- Verbal communication involves only written words.
- Non-verbal communication includes facial expressions but not gestures.
- Public speaking is a form of verbal communication.
- Visual communication uses only spoken words to convey messages.

D Answer the following questions. (*Solved*)

Q1. Explain the difference between verbal and non-verbal communication, providing examples of each.

A1.

Basis	Verbal Communication	Non-verbal Communication
Definition	Verbal communication involves the use of spoken or written words to convey messages.	Non-verbal communication involves conveying messages without using words.
Example	Face-to-face conversations and written documents.	Facial expressions (e.g., smiling), gestures (e.g., waving), and body language (e.g., posture).

Q2. Give examples of how various types of non-verbal communication are used to convey messages in different situations.

A2. Non-verbal communication includes various types:

- Facial expressions:** Smiles indicate happiness, whereas frowns may indicate sadness or displeasure.
- Gestures:** Nodding one's head can signal agreement, whereas pointing can convey direction or emphasis.
- Posture:** Standing upright may convey confidence, whereas slouching may indicate disinterest.
- Touch:** A pat on the back can show encouragement, whereas a firm handshake may signify confidence.
- Space:** Personal space varies by culture and context; standing too close or too far can send different messages.
- Eye Contact:** Maintaining eye contact can show interest and attentiveness, whereas avoiding it may convey discomfort.
- Paralanguage:** This includes tone, volume, and pace of speech. Speaking slowly may indicate seriousness, whereas a fast pace can signal excitement.

Q3. Meenal sat for a written test for the role of a communication trainer. The test paper included a question asking her to identify the type and form of communication taking place in different situations. Look at the scenario and help Meenal identify them.

S. No.	Scenario	Type of Communication
1.		
2.		
3.		
4.		
5.		

A3.

S. No.	Scenario	Type of Communication
1.	A person sending a text message on a smartphone.	Written communication through text messages under verbal communication.
2.	A teacher giving a lecture in a classroom.	Oral communication under verbal communication.
3.	A person using sign language to communicate with a deaf individual.	Non-verbal communication through sign language.
4.	A group of coworkers having a video conference call.	Oral communication (through video conference) under verbal communication.
5.	A group of protesters holding signs with slogans.	Visual communication.

Answer Key

A 1. b 2. c 3. c 4. a

B 1. Verbal 2. posture 3. Public speaking 4. designs

C 1. False. Verbal communication involves both written and oral words.

2. False. Non-verbal communication includes facial expressions, gestures, postures, and eye contact.

3. True.

4. False. Visual communication uses charts, designs, logos, signs, and symbols to convey messages.

2

Communication and Its Elements

Communication is a fundamental aspect of our lives that enables us to connect with others, share our ideas, express our emotions, and collaborate on various tasks. Imagine a world without communication; it would be a silent and isolated place where understanding and cooperation would be challenging. Communication plays a significant role in our personal relationships, education, business, and every other aspect of our daily interaction.

Communication

Communication can be described as the act of transmitting information, thoughts, concepts, or emotions between individuals or groups through a range of mediums, including verbal language, written expressions, non-verbal cues, body language, gestures, visual or auditory cues, and modern technology. This act serves as the binding agent that unites communities by helping us to express our requirements, convey our individuality, and build connections. It plays a vital role in the functioning of our society.



Importance of Communication Skills

Communication is the cornerstone of human interaction and is integral to our daily lives and everyday existence. It enables us to express our ideas, thoughts, needs, desires, and emotions and thus foster connections with others. Effective communication is vital for building relationships, resolving conflicts, addressing disputes, sharing knowledge, and collaborating in various spheres of life, including personal, academic, and professional settings. Good communication skills are crucial for the following reasons:

Building Relationships Effective communication helps in establishing and maintaining strong relationships, whether with friends, family, or colleagues. It nurtures trust and understanding.

Effective Interaction Communication skills are important when we interact with others, whether in personal, professional, or social contexts. We have to express our thoughts and ideas clearly for a meaningful exchange.

Problem Solving When faced with challenges, effective communication is crucial for finding solutions. Misunderstandings can give rise to larger problems. To resolve conflicts, individuals have to express their concerns, understand others' views, and find mutually agreeable solutions to problems.

Sharing Knowledge Through communication, we can pass on knowledge from one generation to the next, ensuring that society continues to learn and grow.

Leadership and Influence People who can communicate well generally become effective leaders as they are able to convey their vision properly, inspire others, and influence decisions within an organisation.

Expressing Emotions It allows us to express our emotions, ranging from joy and affection to frustration and sadness, helping us connect with each other on a deep level.

Personal Development Communication skills contribute to a person's growth and confidence. They are able to speak confidently in public and express themselves clearly while giving presentations, speeches, or group discussions, which helps boost their self-esteem.

Negotiation Skills The skill of negotiation heavily depends on the quality of communication, whether it is in personal or professional life. It is an important skill to possess in current times.

Think and Tell

1. Imagine a world where communication happens using basic gestures and sounds. How do you think this would impact human relationships, knowledge sharing, and development of societies?
2. How is communication important in your life? Give two reasons.

Elements of a Communication Cycle

In a communication cycle, all the elements work together to facilitate effective and meaningful interaction between individuals or groups. Each step, from generating ideas to receiving feedback, contributes to successful communication and promotes mutual understanding.

Sender The sender, also known as the communicator or source, starts the communication process by generating a message to convey. It is the sender's responsibility to present their thoughts, ideas, emotions, or information in a clear and coherent manner. This sets the foundation for effective communication.

Example: Rakesh, an employee of Bindiya Textiles, composes an email to his manager, regarding a project update.

Ideas Ideas refer to the thoughts, concepts, or information that a sender intends to transmit during the whole process. These ideas may include opinions, facts, instructions, or emotions that the sender wants to share with the receiver.

Example: Rakesh thinking and organising the information or details before writing the email.

Encoding Encoding includes putting ideas or information into a format that can be transmitted to the receiver. This often involves selection of words, creating visuals, using symbols, gestures, or body language to convey the intended message accurately.

Example: Rakesh decides to use formal language when writing email to his manager.

COMMUNICATION

1

Is essential for human interaction and relationships

2

Facilitates sharing of knowledge, ideas, and emotions

3

Is vital for personal, academic and professional success

4

Fosters cultural understanding and social cohesion

5

Enables influence, persuasion, and societal development

Communication Channel The communication channel is the medium through which the encoded message is transmitted from a sender to the receiver. Channels can be verbal (spoken or written) or non-verbal (visual cues, gestures, and body language), and they influence how the message is received and comprehended.

Example: Rakesh uses a digital channel for drafting and sending email to update his manager.

Receiver The receiver is the intended recipient of the message. They play a crucial role in the communication process. They actively listen, observe, and interpret the message. The receiver's understanding impacts the success of the communication.

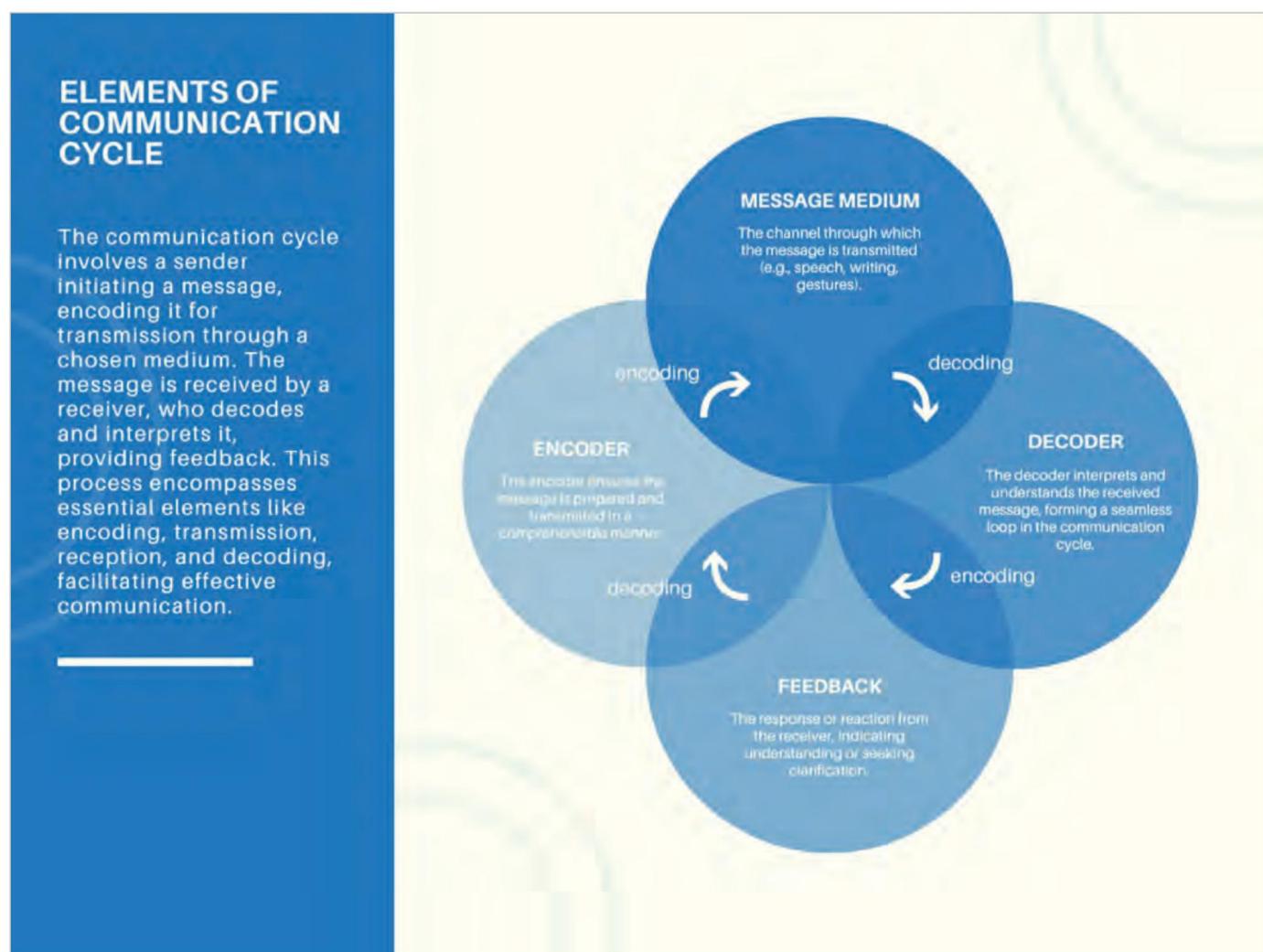
Example: Rakesh's manager, Mr Palabh, is the receiver of the message.

Decoding Decoding is the process by which the receiver interprets the encoded message and extracts its meaning. It involves understanding the words, symbols, or gestures used by the sender and translating them into thoughts or emotions.

Example: Mr Palabh reads the email sent by Rakesh and tries to understand the updates shared by him.

Feedback Feedback is the response or reaction provided by the receiver to the sender's message. It helps confirm whether the intended message was received and understood accurately. Feedback can be verbal or non-verbal and aids in closing the communication loop.

Example: Mr Palabh (receiver) decides to reply to Rakesh's email congratulating him for sharing descriptive information on the project.



Scenario: A Project Update Meeting

1. Sender (Communicator): Raghav, a project manager in a multi-national firm, has valuable updates on a critical project and wants to communicate these updates to his team.
2. Ideas: Raghav's ideas revolve around the project's progress, challenges faced, and solutions proposed to deal with them. He aims to ensure that his team is well-informed and motivated to overcome the obstacles they encounter.
3. Encoding: Raghav encodes his ideas into a well-structured presentation, carefully choosing appropriate technical terms and illustrative visuals to convey complex information effectively.
4. Communication Channel: Raghav decides to use a combination of verbal and visual communication channels. He plans to present his updates using a presentation during a virtual team meeting.
5. Receiver: The intended receivers comprise his project team members and stakeholders. They will participate in the virtual meeting to receive the updates and provide any other valuable insights.
6. Decoding: During the meeting, team members decode Raghav's presentation by actively listening, observing the slides, and mentally processing the information to understand the project's status and the direction in which it is heading.
7. Feedback: Following Raghav's presentation, the team members offer their feedback. They ask questions for clarification, provide suggestions for improvement, and share their thoughts on the project's way forward.

In this scenario, Raghav, as the sender, initiates the communication cycle by encoding his project updates into a presentation. The communication channel involves a virtual meeting where he presents the updates to his team (receivers). They decode the presentation's content, engage in discussions, and provide feedback, thus completing the communication cycle.

Effective communication in a business setting ensures that important information is shared accurately and that team members are aligned with project goals. The cycle promotes the collaborative nature of communication and plays a significant role in achieving successful outcomes.

Error Alert!

A common misconception about the communication cycle is that it is a one-way process focused on the sender transmitting information to the receiver. In reality, a communication cycle involves a two-way exchange of information. The receiver actively decodes and interprets the message, providing feedback that completes the cycle.

Activity Time

Activity 1: Communication Cycle in Real-Life Scenarios

(Group Work)

Form a group of 4 students. Choose a real-life scenario (e.g., job interview, team project, family dinner) and identify how each element of the communication cycle applies to your chosen scenario.

In an A3-sized sheet, create a diagram to represent the communication cycle in your context. Present it to your class and explain your choice.

Activity 2: Role-play for Effective Communication

(Pair Work)

Pair up with a classmate. Select a communication scenario between an unhappy customer and a customer service agent.

Plan your role-play and focus on using the communication cycle effectively. Perform the role-play in front of your class.

Chapter Checkup

A Select the correct option.

- 1 What is the role of feedback in the communication cycle?
 - a It initiates the communication process.
 - b It completes the communication cycle and ensures mutual understanding.
 - c It encodes the message for the receiver.
 - d It selects the communication channel.
- 2 Which of the following is NOT a function of having good communication skills?
 - a Building relationships
 - b Ability to negotiate with others
 - c Low self-esteem
 - d Having problem-solving abilities
- 3 What is the primary purpose of encoding in the communication process?
 - a To select the communication channel
 - b To convert ideas into a form that can be transmitted
 - c To provide feedback to the sender
 - d To actively listen and interpret the message

B Fill in the blanks with the most suitable words.

- 1 Through communication, we can pass on from one generation to the next.
- 2 Effective communication fosters trust and understanding, which are essential for building and maintaining
- 3 is the process by which the receiver interprets the encoded message and extracts its meaning.
- 4 Feedback from the receiver helps confirm whether the intended message was received and understood accurately, thus closing the loop.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 Communication channels can only be verbal.
- 2 Encoding is the process of interpreting an encoded message.
- 3 Feedback is not a crucial element in the communication cycle.
- 4 The receiver is the intended recipient of the message.

D Answer the following questions. (*Solved*)

Q1. Why is feedback an essential part of effective communication?

A1. Feedback allows the sender to gauge the receiver's understanding of the message. It helps clarify any misunderstandings, reinforces the message's importance, and ensures that the communication cycle is complete. This two-way exchange of information is crucial for achieving mutual understanding and successful communication.

Q2. List any five ways in which communication skills are important for us.

A2. Good communication skills are very crucial for the following reasons:

- **Building Relationships:** Effective communication helps in establishing and maintaining strong relationships, whether with friends, family, or colleagues. It fosters trust and understanding.
- **Effective Interaction:** Communication skills are very important when we interact with others, whether in personal, professional, or social contexts. We have to express our thoughts and ideas clearly for a meaningful exchange.

- **Problem Solving:** When faced with challenges, effective communication is crucial for finding solutions. Misunderstandings can escalate into larger problems. To resolve conflicts, individuals have to express their concerns, understand others' views, and find mutually agreeable solutions to problems.
- **Sharing Knowledge:** Through communication, we can pass on knowledge from one generation to the next, ensuring that society continues to learn and grow.
- **Leadership and Influence:** People who can communicate well generally become effective leaders as they are able to convey their vision properly, inspire others, and influence decisions within an organisation.

Q3. There has been a lot of technological advancement in communication recently, such as social media. Rohan decides to post a picture and share a caption related to it. He receives a lot of comments and likes from his friends online. Explain the elements of the communication cycle in this situation.

A3. The elements of communication cycle in the situation are as follows:

- **Sender:** Rohan is the sender of the message, as he decides to post his picture with a caption.
- **Idea:** His picture and caption are the ideas he wants to share.
- **Encoding:** Rohan message is encoded in the form of a picture and caption. That means he uses visual and verbal communication. He uses words, images, and symbols that will be understood by the receivers.
- **Channel:** He uses social media channels to transmit his verbal and visual messages.
- **Receiver:** His friends on social media platforms are the receivers of his messages.
- **Decoding:** They interpret and comprehend the messages shared by Rohan.
- **Feedback:** Rohan receives feedback on his message through the comments and likes shared by his friends online.

Answer Key

- A** 1. b 2. c 3. b
- B** 1. knowledge 2. relationships 3. Decoding 4. communication
- C** 1. False. Communication channels can be verbal or non-verbal.
 2. False. Encoding is the process of converting ideas into a form that can be transmitted.
 3. False. Feedback is a crucial element in the communication cycle.
 4. True.

3

Perspectives in Communication

Communication primarily helps in understanding each other's thoughts or viewpoints, which can further strengthen relationships and increase the flow of information. Communication is greatly impacted by an individual's thoughts, culture, and way of perceiving certain situations.

Perspectives in Communication

Perspectives are ideas, views, or fixed ways of thinking, and this affects how communication is conducted within a group or between individuals. To fully understand the need for communication and encoded messaging, one must explore them from different perspectives. These perspectives provide varied lenses through which we can understand dynamic messaging holistically.

For example, if an employee believes his boss or manager is severe to them, even when they are kind, they may find it difficult to accept their views or feedback. They will be closed to communication, and this can lead to an unpleasant environment.

Thus, there are views that are mostly accountable for the type of communication we have with one another.

However, there are different reasons that shape perspectives towards situations or people. Communication does not have a straightforward or single approach. It is deeply impacted and shaped by factors that affect how we express ourselves, understand others, and perceive the complexities of human connection. Our cultural background, the language we use to express our emotions, personal experiences, and our handling of technology all play a significant role in building our perspectives. These might prevent us from sharing and understanding messages.



Did You Know?

1. Perspectives are important because they help to determine what the other person is thinking.
2. Perspectives allow for a successful, productive conversation that leads to positive results.

Factors Affecting Perspectives in Communication

Language The language one uses to express themselves and one's proficiency in a language can influence communication. When someone employs incorrect terminology, unfamiliar jargon, or fails to provide sufficient detail, language can act as a barrier to communicating what one wishes to convey.

Example: In a multinational company, Tanisha has to meet a client from France. She is proficient in English and Hindi and knows a few phrases and words in French. Mr Andrew, her French client, struggles with English.



Visual Perception Visual perception is the ability of the brain to infer what we see through our eyes. Humans have the tendency to focus only on the parts that are easily noticeable or accessible; this leads to forming perspectives based on incomplete information.

Example: Look at the image. What do you see?

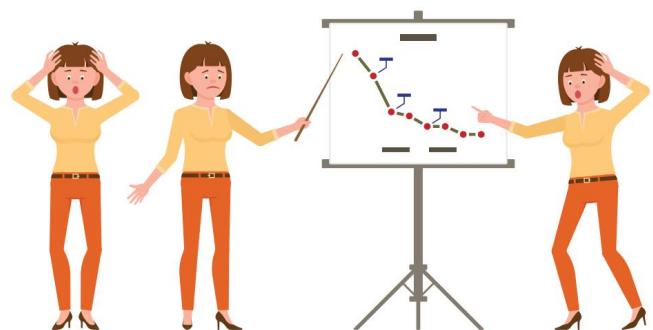
On first glance, one may see a tree with widespread branches. But on staying further with the visual, one can notice the animals tiger and gorilla too.

We tend to form perspectives and judgments on the first look at this, and they may act as obstacles in communication.



Experiences The experiences of the past give shape to a person's communication habits, triggers, and sensitivities. A traumatic experience from the past can stop us from understanding or communicating clearly or without hesitation.

Example: Last year, while presenting at the Annual Sales meeting, Rishika mispronounced a word. She noticed her colleagues exchanging glances and giggles. This experience has stayed with her. Thus, when she was asked to present this year, she hesitated and felt under-confident. She was conscious during her presentation and was of the perception that her colleagues might be looking for a moment to mock her.



Prejudice Prejudices, or previously built notions about individuals, groups, or something, can affect how we communicate and express them. If we have biases against a particular group, we may be less likely to listen to their perspectives or give them the benefit of the doubt.

Example: Kamlesh is a hard-working employee and has been trying to prove it to her management through her rigour and efficiency. In spite of all this, she has not been promoted. The management has a biased opinion that she may not be able to balance her personal and professional lives when scaling up the ladder.



Feelings Feelings play a pivotal role in communication. One's feelings towards a person, thing, or group decides the type of communication that will take place.

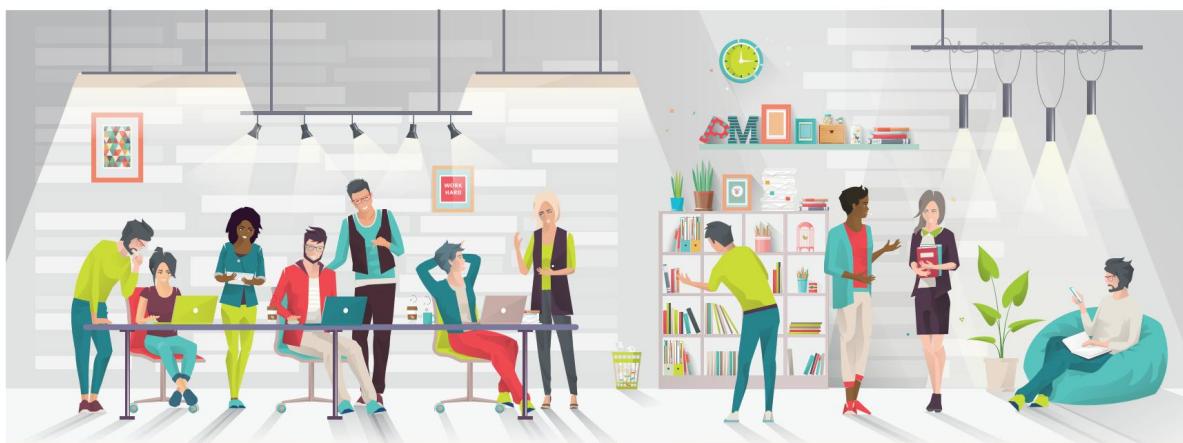
Feeling negatively or unsure about things may lead to closed and unclear communication. It can be influenced by one's personal opinion.

Example: Sakshi is a Product Developer at Youth Edtech. She feels insecure about her job role. Thus, every time someone proposes a great idea in a product meeting, she tries to shun them away. Though she believes in the potential of the ideas, she allows her feelings to overpower her while communicating her feedback.

Environment The environment in which communication is taking place plays a significant role in forming a perspective.

A noisy or chaotic environment may cause barriers to communication.

Example: Two colleagues conversing at a loud office party may not be able to focus. They face difficulty in understanding the information shared. On the other hand, if we communicate in a calm and peaceful environment, we will be able to communicate productively.



Cultural Difference Different cultural backgrounds may lead to different interpretations of a message or idea being communicated.

Gestures and symbols that have a certain meaning in one culture may have a different interpretation in another culture. This can lead to misunderstandings when people from different cultural backgrounds interact.

Example: India is a land of diverse cultures. While some cultures are loud and expressive in their communication, others may find it disrespectful.



In a nutshell, it is important to allow these elements to impede the sharing of information in any way.

Activity Time

Activity 1: What Is Your Opinion

(Group Work)

Choose any one factor affecting perspective in communication. Form a group of 4-5 students and discuss the chosen factor in detail.

Make notes and choose volunteers to summarise the discussion.

Activity 2: My Experience

(Individual Work)

Share a personal account/experience when you felt your communication was impeded by any one of the factors affecting perspectives in communication. Share details as to what happened and mention the factor that led to the miscommunication/misinterpretation.

Activity 3: Group Discussion

(Group Work)

In a group of 4-5 students each, discuss the example of factors affecting communication in the workplace. You may discuss and list one example for each factor.

To make your presentation interesting, you may also enact the scene of how these factors can impact communication at work.

Chapter Checkup

A Select the correct option.

- 1 Which of the following is not a factor affecting perspective in communication?
 a Feeling b Prejudice
 c Attitude d Love
- 2 Perspective is an individual's:
 a Point of view b Body language
 c Activity d None of these
- 3 You are talking to a friend at a function where there is loud music being played by the orchestra. Which factor affects this statement?
 a Language b Environment
 c Feelings d Past experiences

B Fill in the blanks with the most suitable words.

- 1 is a negative attitude, especially when it is related to hatred or intolerance for certain groups of people.
- 2 is a mindset that decides how individual perceives an idea or situation and responds to it.
- 3 Our also serves as a caution and help us protect ourselves from dangerous situations.
- 4 and not trusting others affect communication.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 Language can act as a barrier to communicate what one wishes to convey.
- 2 Feelings cannot affect our ways of communication.
- 3 Perspectives are ideas, views, or fixed ways of thinking. These sometimes affect our communication.

D Answer the following questions. (*Solved*)

Q1. How does the environment affect communication? Give an example.

A1. The environment in which communication is taking place plays a significant role in forming a perspective. A noisy or chaotic environment may cause barriers to communication.

Example: Two colleagues conversing at a loud office party may not be able to focus. They face difficulty understanding the information shared.

Q2. Surabhi and her friends were debating an artwork. Some of them think that it is a jungle scene, whereas others perceive it as the journey of a person. Which factor is influencing their perspective on that artwork?

A2. Visual perception is the factor that influences Surabhi and her friends. Visual perception is the brain's ability to make sense of what we see through our eyes.

Q3. Elaborate on how the factors can become barriers in communication.

A3.

Factor	How factor can become a barrier?
Language	In case of the use of incorrect words, unfamiliar language and lack of detail, language can act as a barrier to communicate what one wishes to convey.
Visual perception	Visual perception is the brain's ability to make sense of what we see through our eyes.
Experience	Letting our earlier experience stop us from understanding or communicating clearly.
Prejudice	If we have biases against a particular group, we may be less likely to listen to their perspectives or give them the benefit of the doubt.
Feelings	Our feelings and emotions, such as lack of interest or not trusting the other person, affect communication.
Environment	Noise or disturbances in the surroundings may make communication difficult.
Culture	Signs that have different meanings in different cultures, such as showing a thumb, may mean a good job for some people but may be insulting to others.

Answer Key

A 1. c 2. a 3. b

B 1. Prejudice 2. Attitude 3. Experience 4. Feelings

C 1. True.

2. False. Feelings can affect our ways of communication.

3. True.

4

Basics of Writing Skills

Writing helps us share ideas, feelings, and information in a way that lasts. In this digital era, with constantly expanding information, communication, and technology, writing is all the more significant. It is not just about sending an email or typing an essay; it is a skill that helps us express ourselves clearly and connect with others. A written document or information lasts longer and can be referred to later.

Good writing requires good command and understanding of the language in which one is communicating. It is important to ensure that the writing is free from grammatical errors. In order to improve one's writing skills, it is pivotal to know about the fundamental elements of grammar.

Sentences

Sentences are the basic building blocks of written and spoken communication in many languages, including English. A sentence is group of words that combine to make complete sense. A sentence conveys a complete thought or idea and often serves as a complete statement or question. A sentence always starts with a capital letter and ends with a full stop, question mark, or exclamation mark.

For example:

Lavina loves to play badminton.

Dheeraj is going to Shimla.

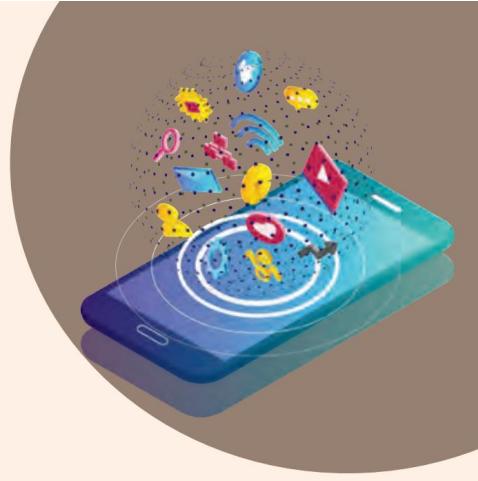
Parts of Sentence

A sentence contains a subject and a predicate. A **subject** in a sentence is the thing or person about whom we get information from the sentence. A **predicate** in a sentence is what is being said about the person or thing in the sentence.

Subject <i>(Who/what the sentence is about)</i>	Predicate <i>(What is being said about the subject)</i>
Lavina	loves to play badminton.
The book	is very captivating.

In this sentence, 'Lavina' is the subject, as the sentence is telling about what she loves and 'loves to play badminton' is the predicate, as it gives some information about Lavina, the subject.

In this sentence, 'The book' is the subject, as it is something that is being talked about in the sentence and 'is very captivating' is the predicate, as it is giving some information about the book. It tells us what kind of book it is.



Subject-Verb-Object

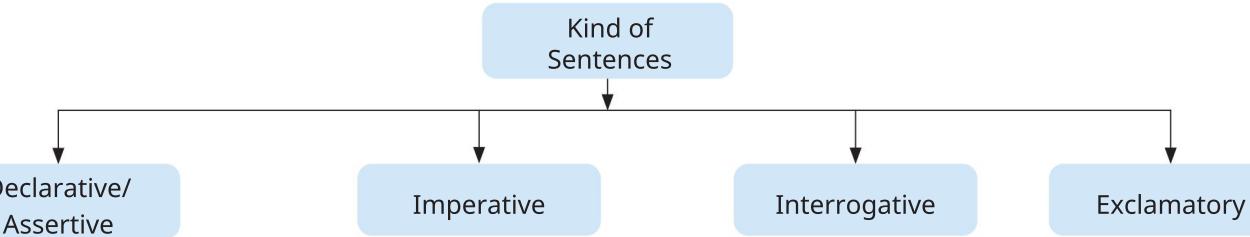
Each sentence in the English language has a sentence structure. A sentence structure may consist of a subject, verb and/or an object. The *Subject* shows **what or whom** the sentence is about. A *Verb* shows an action and **what** the subject is doing. An *Object* describes **who or what** receives the action.

Example:

Sentence	Subject	Verb	Object
The girl sat on the bed.	The girl	sat	the bed
The boy bought a book.	The boy	bought	a book
She picked the ripe mangoes.	She	picked	mangoes
The ladder fell on the bike.	The ladder	fell	the bike

Kinds of Sentences

Sentences are of four kinds.



Kind of Sentences	Definition	Examples
Assertive or Declarative sentence	It states facts, information, or arguments. It ends with a period (.)	The sun sets in the West. New Delhi is the capital of India.
Imperative sentence	It is used to give commands, make requests, offer advice, or issue instructions. It doesn't use subject, but 'you' is often understood as the implied subject. It may end with a period (.) or an exclamation mark (!).	Please open the door. Come here. Have a good day!
Interrogative sentence	It is used to ask questions. It ends with a question mark (?). It primarily uses the WH question words.	What are you planning for the weekend? Are you joining us for the group study tomorrow?
Exclamatory sentence	It states strong emotion, excitement, surprise, or other intense feelings. It makes use of the exclamation mark (!) either in between the sentence or at the end.	Well done! Hurray! We won the match.

Think and Tell

- Identify the subject and the predicate in the given sentence.
Students enjoy reading storybooks.
- Give one example of an exclamatory sentence.

Phrases

A group of words that come together to form a unit but is not complete in itself is called a phrase. They do not make complete sense when used independently.

Example:

Phrase	Sentence
a fragrant flower	Rohan gifted his mother a fragrant flower.
In the first case, 'a fragrant flower' is a group of words that have been combined to make a unit. But does it make complete sense?	
In the second case, we get complete information about the flower. We are told that Rohan gifted the flower to his mother.	
going downhill	The men are going downhill to get the groceries.
In the first case, 'going downhill' is a group of words that has combined to make a unit. It is understood what going downhill means, but we do not have complete information.	
In the second case, we get complete information about who is going downhill and why.	

Types of Phrases

Types of Phrases	Description
Noun phrase	<p>It is a group of words that work as a noun in a sentence. It consists of a noun (the main word) and its modifiers, which can have adjectives, articles, pronouns, and other words that give additional information about the noun. He is looking at the dewy white mountains.</p>
Verb phrase	<p>It is a group of words that forms a verb in a sentence. It includes the main verb and the helping verbs within a sentence. I should have reported the incident to the police.</p>
Adjective phrase	<p>It is a group of words that describe a noun or a pronoun. The group of words provides more information about the noun in the sentence. The huge grey elephant raised its trunk.</p>
Prepositional phrase	<p>It is a group of words that starts with a preposition and usually ends with a noun or pronoun, the object of the preposition. They function as adjectives or adverbs to provide additional information in a sentence, typically about location, direction, time, or manner. Ragini is dancing with great enthusiasm.</p>
Adverb phrase	<p>It is a group of words that provides additional information about the action, verb, adjective, or adverb it modifies. It describes how, when, where, why, or to what extent something is happening. The car is parked right outside the door.</p>

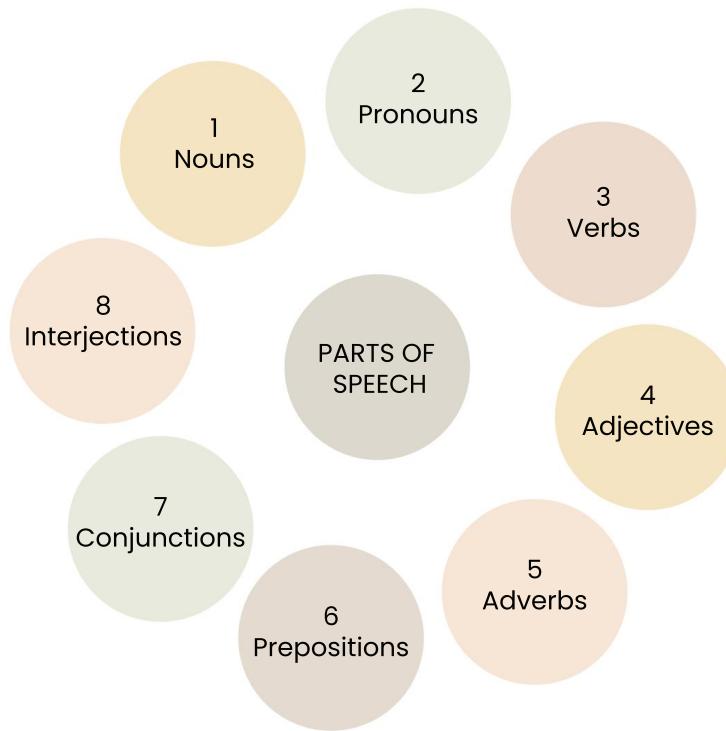
Think and Tell

Identify the types of phrases in the sentences below.

1. **A book on the shelf** is a classic.
2. **The big brown dog** belongs to my neighbour.

Parts of Speech

Parts of speech are the essential building blocks that help us construct meaningful sentences, express our ideas clearly, and engage in effective communication with others. There are 8 parts of speech in the English language. These are nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjections.



Parts of Speech	Definition	Examples
Nouns	It is the name of a person, place, or thing.	Rohan is singing a song. The vase is blue in colour.
Pronouns	It is a word used in place of a noun. It helps reduce repetition.	Rohan is singing a song. He is enjoying it very much. The vase is blue in colour. It is kept on the table.
Verbs	It expresses an action. It tells what the subject is doing in the sentence.	Rohan is singing a song. The dog is barking at the passerby.
Adjectives	It describes the noun. It is used to give details/information about the noun in a sentence.	Rohan is classic song. The blue vase is kept on the table.
Adverbs	It provides additional information about a verb, adjective, or another adverb in a sentence. It often answers questions such as how, when, where, why, or to what extent an action is taking place.	Rohan is singing melodiously . The books are organised neatly on the shelf.
Prepositions	It tells about location, direction, time, or the relationship between various elements in a sentence. Words like in, on, into, behind, beside, at, across, through, and between are prepositions.	The vase is on the table. Rakesh is running across the corridor.

(continued...)

Parts of Speech	Definition	Examples
Conjunctions	<p>Conjunctions mean to connect.</p> <p>They are words used to connect words, phrases, clauses, or sentences, creating a logical relationship between them.</p> <p>Some of the conjunctions are and, or, but, although, because, otherwise, and so on.</p>	<p>Although Rohan was enjoying singing, but he loves dancing.</p> <p>Neither Kashika nor Simran will appear for the interview.</p>
Interjections	<p>It is used to express strong or sudden emotions, feelings, or reactions.</p> <p>They are often one or two words and can stand alone in a sentence.</p> <p>They are used to convey various emotions such as surprise, joy, anger, approval, disapproval, and more.</p>	<p>Wow! You sang melodiously.</p> <p>Shh! The baby is sleeping.</p>



Did You Know?

The word conjunction comes from the Latin word '*coniunctio*' which means to join together.

Think and Tell

Fill in the blanks with the most appropriate part of speech.

1. The airplane flew (preposition) the clouds, and the passengers gazed (adverb) at the breathtaking view.
2. He said, ‘ ’ (interjection), when he realised he had left his wallet at home.

Articles

The words '*a*', '*an*', and '*the*' are known as articles. Articles are generally used before nouns in a sentence.

Example:

After **the** long meeting, **the** cup of coffee tasted good.

By using the article **the**, we have shown that it was one specific meeting that was long. The use of **the** for cup of coffee refers to a specific cup of coffee that tasted good.

Example:

After **a** long meeting, **a** cup of coffee tastes particularly good.

By using the article **a**, we have created a general statement, implying that any cup of coffee would taste good after any long meeting.

Types of Articles

Articles are of two types: **Definite** and **Indefinite Articles**.

Example:

‘**a university**’ (because ‘university’ starts with a consonant sound).

Definite Article (the) We use ‘**the**’ when we are talking about a specific thing that the listener or reader already knows about or can easily identify.



Did You Know?

The choice between ‘**a**’ and ‘**an**’ depends on the sound that follows, not just the first letter.

Examples:

1. The manager called a staff member to carry the files. (*a particular manager*)
2. Please pass **the** documents. (*some specific documents*)

Rules for Using the Definite Article (the)

1. **Specificity:** Use 'the' when referring to a specific item or group of items that the listener or reader can identify with or is already familiar with.

Example: 'I saw **the** woman in a red saree, praying at **the** temple'. (You are referring to a particular woman in a red saree and a specific temple.)

2. **Unique Objects:** Use 'the' when referring to a unique object or something that is one of a kind.

Example: I visited **the** Taj Mahal last year. (There is only one Taj Mahal.)

3. **Superlative Forms:** Use 'the' before superlative adjectives (e.g., the best, the tallest) to indicate that something has the highest degree of quality.

Example: She is **the** best manager to work with. (Meaning she is the manager with the highest level of leadership quality.)

4. **Ordinals:** Use 'the' with ordinal numbers (e.g., the first, the second) when referring to specific items in a sequence.

Example: He won **the** first prize in the contest. (referring to a specific prize—the first one)

5. **Geographical Features:** Use 'the' before the names of oceans, seas, rivers, mountain ranges, and other geographical features.

Example: The Ganga River flows through eleven Indian states.

6. **Countries With Plural Names:** Use 'the' when referring to countries with plural names, such as 'the United States' or 'the Netherlands'.

Example: I have never been to **the** Netherlands.

7. **Musical Instruments:** Use 'the' before the names of musical instruments.

Example: She plays **the** harmonium beautifully.

8. **Newspapers:** Use 'the' before the names of newspapers.

Example: I read **the** Times of India every morning.

9. **Religious Books:** Use 'the' with religious books to indicate a specific, well-known, and revered text within a particular religious tradition.

Example: I find comfort in reading **the** Bhagavad Gita every morning.

10. **Nationality as a Noun:** Use 'the' with nationalities when they are used as nouns to refer to the people of a specific country.

Example: The Japanese are known for their punctuality.

Indefinite Articles (a/an) We use 'a' or 'an' when we are talking about something in a general or non-specific way.

Examples:

I have a meeting at 2 pm.

She is an excellent candidate for the job.

Rules for Using the Indefinite Article (a/an)

1. **Countable Nouns:** Use 'a' or 'an' with countable nouns when you are referring to one nonspecific item or thing.

Example: I saw a dog in the park. (referring to one dog in general)

2. **Singular Nouns:** Use 'a' before singular nouns that begin with a consonant sound.

Example: He is a teacher. (Teacher starts with a consonant sound: /t/.)

Use 'an' before singular nouns that begin with a vowel sound.

Example: She has an umbrella. (Umbrella starts with a vowel sound: /ʌ/.)

3. **Singular Nouns Starting with a Silent 'H':** Use 'an' before singular nouns that begin with a silent 'h'.

Example: He's an honest person. (Honest starts with a silent 'h' and begins with the vowel sound of 'o')

4. **Professions and Nationalities:** Use 'a' or 'an' when referring to someone's profession or nationality without specifying a particular person.

Example: She is a lawyer. (referring to any lawyer in general)

She is an Indian chef.

5. **General Statements:** Use 'a' or 'an' to make general statements about a group.

Example: 'I need a book for my research'. (referring to any book that fits the research).

6. **First Mention:** When you introduce a new, singular, and nonspecific noun in a conversation or text, use 'a' or 'an'.

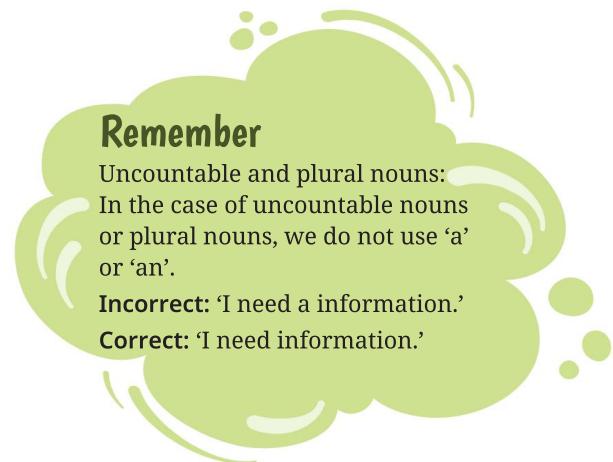
Example: 'I saw a car on the street'. (The car hasn't been mentioned before in the conversation.)

Specific vs. nonspecific: 'a' and 'an' indicate a nonspecific or generic item, whereas 'the' indicates a specific or previously mentioned item.

'I need a pen'. (Any pen will do.)

'I need the pen you borrowed yesterday'. (referring to a specific pen)

Cases with zero article usage, often referred to as 'zero article', occur when we don't use any article (neither 'the', 'a', nor 'an') before a noun.



Use	Reason
I don't like pets.	Pets in general—general meaning.
What time do you have breakfast?	Meals- lunch, breakfast, dinner.
2021 was a great year.	Years, months, days.
He does not speak Telugu.	Languages.
I love studying Biology.	School subjects.
We went to the shopping mall last week.	Next, last.

Connecting Ideas: Paragraphs

Now that we have read about sentences, let us learn how to put them together to make paragraphs. Think of a paragraph as a group of friends who share something in common. Just like how friends stay close, sentences within a paragraph remain interconnected as they discuss a common topic.

Here are two important things to remember when making paragraphs:

1. **One Idea at a Time:** Each paragraph should focus on one main idea. This helps your reader understand what you're talking about.
2. **Moving Smoothly:** When you start a new idea, start a new paragraph. This helps your writing flow smoothly and keeps things organised.

A well-structured paragraph typically consists of three essential elements:

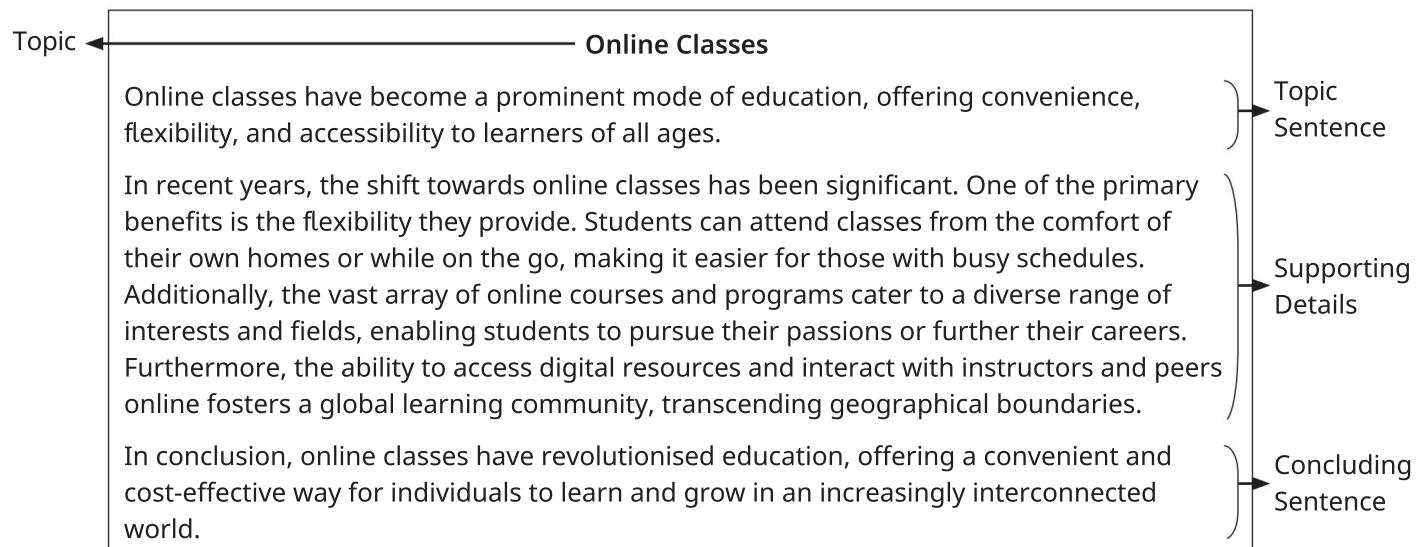
1. A topic sentence
2. Supporting details
3. A concluding sentence

Topic Sentence The topic sentence is like the headline of your paragraph. It introduces the main idea or point that the paragraph will discuss. It is a crucial element that guides the reader's understanding of what's to come.

Supporting Details Supporting details are sentences or examples that provide evidence or an explanation for the topic sentence. They add depth and context to your main idea.

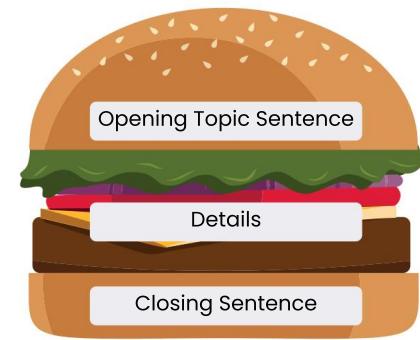
Concluding Sentence The concluding sentence summarises the paragraph's main point and often provides a smooth transition to the next paragraph.

Let's look at an example.



Think of a well-written paragraph as a burger, with each part of it contributing to a distinct flavour. In the opening topic sentence, it is important to introduce the topic. Imagine it as the title of a chapter in a book; it gives you an idea of what's to come. This is followed by detail/details about the topic. You may support the details with examples to strengthen your topic's idea or argument. A good paragraph has a closing sentence that concludes the topic and the main idea. Your closing sentence wraps everything up neatly. It reminds your reader of the main idea you discussed and provides a sense of closure.

A well-structured paragraph is like a mini-story. It has a beginning, a middle, and an end. By following this structure, your writing becomes more organised, making it easier for your readers to understand and enjoy. So, think of paragraph structure as a friendly guide that helps your thoughts flow smoothly and cohesively, turning your writing into a delightful journey of expression.



Activity Time

Mindful Use of Technology

(Individual Work)

Write a paragraph on the topic 'Mindful Use of Technology'. Use the graphic organiser below.

Title	
Topic Sentence	
Supporting Details	
Concluding Sentence	

Chapter Checkup

A Select the correct option.

- 1 Select the sentence that has highlighted the verb and underlined the adjective correctly.
 a Ram saw a beautiful lady in London. b Ram saw a beautiful lady in London.
 c Ram saw a beautiful lady in London. d Ram saw a beautiful lady in London.
- 2 My brother exercises for hour every morning.
 a a b an
 c the d a/an
- 3 Select the declarative sentence from the options given below.
 a You are going the wrong way! b Would you take a look?
 c The car is white and black. d Do not go out.

B Fill in the blanks with the most suitable words.

- 1 Leena watched ant walking over her shoe.
- 2 Yatin wanted to play indoor it was too cold.
- 3 are a part of speech that expresses strong feeling or emotion.
- 4 Samira grabbed the apple while going to school today.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 A well-structured paragraph may not have supporting details.
- 2 An adverb is a part of a sentence that modifies a verb.

- 3 A predicate in a sentence tells about the subject.
- 4 The definite article 'the' is used when nationality is referred to as a noun.

D Answer the following questions. (Solved)

Q1. Describe the parts of sentences. Give an example.

A1. A sentence contains a subject and a predicate. A **subject** in a sentence is the thing or person about whom we get an information from the sentence. A **predicate** in a sentence is what is being said about the person or thing in the sentence.

Example: Kashika is a hard-working girl.

'Kashika' is the subject about whom we get information from the sentence and 'is a hard-working girl' is a predicate as it gives information about the subject.

Q2. Give five usages of the definite article.

A2. The use of the definite article is as follows:

- **Specificity:** Use 'the' when referring to a specific item or group of items that the listener or reader can identify with or is already familiar with.

Example: 'The girl in the blue dress is my best friend'.

- **Unique Objects:** Use 'the' when referring to a unique object or something that is one of a kind.

Example: I visited **the** Qutub Minar in Delhi.

- **Superlative Forms:** Use 'the' before superlative adjectives (e.g., the best, the tallest) to indicate that something has the highest degree of quality.

Example: She is the best manager to work with.

- **Ordinals:** Use 'the' with ordinal numbers (e.g., the first, the second) when referring to specific items in a sequence.

Example: He won the third prize in the drawing competition.

Q3. Nigma has to write a paragraph (15–20 sentences) on one of the topics 'The Importance of Recycling'. Help her to write the paragraph, ensuring a clear introduction, supporting details, and a concluding statement.

A3. The Importance of Recycling

Recycling is crucial for environmental preservation and resource conservation, offering numerous benefits. Recycling serves as a powerful tool for waste reduction, minimising the burden on landfills while simultaneously reducing harmful greenhouse gas emissions during decomposition. Additionally, this practice plays a significant role in the conservation of natural resources. For example, recycling aluminium cans not only saves energy but also mitigates the need for energy-intensive processes associated with mining and refining new aluminium. Furthermore, by reusing paper products, we contribute to the protection of forests and their wildlife habitats. In conclusion, recycling is not only an individual responsibility but also a collective effort that holds the key to a more sustainable and environmentally conscious future, benefiting both current and future generations.

Answer Key

- | | | | | |
|----------|--|------------|------------------|--------------|
| A | 1. a | 2. b | 3. c | |
| B | 1. an | 2. because | 3. Interjections | 4. red/juicy |
| C | 1. False. A well-structured paragraph will have supporting details. | | | |
| | 2. False. An adverb is a part of speech that modifies a verb, adverb, or adjectives in a sentence. | | | |
| | 3. True. | | | |
| | 4. True. | | | |

Unit Reflection

Key Terms

Articles: The words 'a', 'an', and 'the' are known as articles. Articles are generally used before nouns in a sentence.

Communication: Communication can be described as the act of transmitting information, thoughts, concepts or emotions between individuals or groups through many media, including verbal language, written expressions, non-verbal cues, body language, gestures, visual or auditory cues and modern technology. Various methods of communication are verbal, non-verbal and visual.

- **Verbal communication:** Verbal communication is a powerful and dynamic method of sharing ideas, thoughts and information, using spoken or written words.
 - **Oral communication:** Oral communication refers to exchange of information through spoken words. This type of communication involves conversations, discussions, presentations and speeches that occur face-to-face or through various electronic devices.
 - **Written communication:** Written communication entails utilising written language to share information. This type of communication includes various forms such as emails, letters, articles, social media posts and text messages.
- **Non-verbal communication:** Non-verbal communication implies interacting with others without the use of spoken or written language. Instead, it involves using facial expressions, hand signals, body postures, stances and other gestures.
- **Visual communication:** Visual communication is done using pictures, symbols and designs to share ideas and information.

Various elements of a communication cycle are:

- **Sender:** A sender, also known as a communicator or a source, starts the communication process by generating a message to be conveyed.
- **Idea:** An idea refers to the thoughts, concepts or information that a sender intends to transmit during a communication process.
- **Encoding:** Encoding includes putting ideas or information in a format that can be transmitted to a receiver.
- **Communication channel:** A communication channel is the medium through which an encoded message is transmitted from a sender to a receiver.
- **Receiver:** A receiver is an intended recipient of a message who actively listens, observes and interprets the message.
- **Decoding:** Decoding is the process by which a receiver interprets an encoded message and extracts its meaning. This process involves understanding the words, symbols or gestures used by the sender and translating them into thoughts or emotions.
- **Feedback:** Feedback is the response or reaction provided by a receiver to a message. The feedback helps confirm whether the intended message was received and understood accurately.

Sentence: A sentence is a group of words that combines to express a complete thought. A sentence conveys a complete thought or idea and often serves as a complete statement or question. There are four kinds of sentences:

- **Assertive/Declarative sentence:** It states facts, information or arguments and ends with a full stop (.).
- **Imperative sentence:** It is used to give commands, make requests, offer advice or issue instructions.
- **Interrogative sentence:** It is used to ask questions and ends with a question mark (?).
- **Exclamatory sentence:** It states strong emotion, excitement, surprise or other intense feelings. The exclamation mark (!) is used either in between the sentence or at the end.

Perspectives: Perspectives are ideas, views or fixed ways of thinking that affect how communication is conducted within a group or between individuals.

Phrase: A group of words that together form a unit but do not convey a complete thought is called a phrase. A phrase does not express a complete thought or idea when used independently.

Visual perception: Visual perception is the ability of our brain to infer what we see through our eyes.

Things to Remember

- Non-verbal communication involves expressions, posture, gestures, touch, space, eye contact and paralanguage.
- Good communication skills are important for building relationships, effective interaction, solving problems, sharing knowledge, expressing emotions, personal development, being a leader and negotiating with others.
- Various factors that affect perspectives in communication are language, visual perception, past experiences, prejudices, feelings, and environment and cultural differences.
- A sentence contains a subject and a predicate. A **subject** in a sentence is the thing or person about whom we get information from the sentence. A **predicate** in a sentence is what is being said about the person or thing in the sentence.
- Each sentence has a sentence structure that consists of a subject, verb and/or an object. The subject shows **what or whom** the sentence is about. The verb shows an action and **what** the subject is doing. The object describes **who or what** receives the action.
- Various types of phrases are noun phrase, verb phrase, adverb phrase, prepositional phrase and adjective phrase.
- Eight parts of speech are nouns, pronouns, adjectives, verbs, adverbs, prepositions, conjunctions and interjections.
- There are two types of articles – definite and indefinite.
- A well-structured paragraph typically consists of three essential elements—a topic sentence, supporting details and a concluding sentence.

Test Your Knowledge

A. Select the correct option.

1. Which of the following elements is not a part of non-verbal communication?

- a. Expressions b. Postures
c. Gestures d. Email

2. Which of the following is not an attribute of communication?

- a. Essential for human interaction and relationships
b. Vital for personal, professional and academic success
c. Discourages sharing of ideas, emotions and knowledge
d. Enables influence, persuasion and societal development

3. Which part of a language can act as a barrier to communication?

- a. Correct terminology b. Unfamiliar jargons
c. Complete details d. Use of correct expressions

4. 'Will you join us for the party tomorrow?' What type of sentence is this?

- a. Interrogative b. Exclamatory
c. Assertive d. Imperative

5. Rajan connecting with his friends through video conferencing is an example of which type of communication?

- a. Written b. Non-verbal
c. Oral d. Visual

6. What is the response or reaction provided by the receiver to the sender's message called?

- a. Feedback b. Sender
c. Idea d. Receiver

7. What is a group of words that together form a unit but do not convey a complete idea?

- a. Sentence b. Phrase
c. Subject d. Object

8. 'A beautiful red butterfly is sitting on the flower'. Identify the type of phrase.

- a. Noun phrase b. Verb phrase
c. Adverb phrase d. Adjective phrase

B. Fill in the blanks with the most suitable words.

1. are generally used before nouns in a sentence.

2. Visual communication is when we use pictures, and designs to share ideas and information.

3. A in a sentence is the thing or person about whom we get information from the sentence.

4. The is the intended recipient of a message.

5. is the ability of our brain to infer what we see through our eyes.

C. State whether the following are True or False. Correct the statements that are false.

1. An SMS is a written, typed or printed message that is enclosed in an envelope and sent through a postal service.

2. A noisy or chaotic environment will enhance the communication process.

3. Effective communication helps in establishing and maintaining strong relationships, whether with friends, family or colleagues.
4. The article 'a' should be used before the noun 'hour'.
5. Good writing requires good command and understanding of the language in which one is communicating.

D. Short answer-type questions.

1. How are encoding and decoding parts of the communication cycle?
2. What are the advantages of visual communication?
3. What are the types of articles? Give an example each.

E. Long answer-type questions.

1. Differentiate between verbal and non-verbal communication.
2. Describe any three factors, which affect perspectives in communication.
3. What is a sentence? Explain the two parts of a sentence with an example.

F. Competency-based questions.

1. Rajan works as a marketing head in AND Digital Marketing Co. He was given preference over his peers because of his good communication skills. Tell us how these skills can help a person to grow in life and career.
2. Your friend Tina has decided to participate in a paragraph-writing competition. Her topic is 'My Dream Career'. What things would you like to tell her in order to help her write a well-structured paragraph?

5

Self-management and Its Impact

In today's dynamic world, it is important to regulate and control one's thoughts, behaviour, and emotions to be able to lead an accomplished life on both a personal and a professional front. It empowers an individual to understand the complexities of life, make informed decisions, and maintain equilibrium.

Self-management

Self-management is the capability of an individual to exercise control over one's feelings, ideas, thoughts, emotions, and behaviour to achieve the desired goals in both personal and professional settings. It helps an individual make effective decisions and maintain their well-being. It includes working towards the pre-determined goals and motivating oneself. Those who are better at managing themselves are able to set their priorities, manage their time, control their impulses, and take responsibility for their actions. They are more productive and content in life.

Everyone knows some form of self-management if they can take care of their most basic needs. To successfully accomplish the established future goals and to reach a high degree of self-management, a variety of abilities must be acquired, combined with discipline.

Example:

Rutuja works as a Product Analyst at Initiative EdTech Co. She manages herself efficiently and handles all her tasks, time, and emotions well. She sets her targets and manages several ongoing projects with tight deadlines and a constant stream of meetings. The way she has managed herself helps her to practice healthy living, enhances her productivity, reduces stress, and gives her sufficient time to spend with her family.

Self-management Skills

Self-management makes a person trustworthy and reliable. A few skills have been listed below that can help manage the overall personality of a person.



Skill	Explanation
Self-awareness 	It is to know oneself as an individual—be it one's likes, dislikes, strengths, or weaknesses, and reflect on one's experiences to gain valuable insights into one's personality.
Self-confidence 	It is to believe in oneself that they can complete any task and face all the obstacles that come their way.
Self-motivation 	It is an intrinsic feeling that encourages one to complete tasks and achieve goals independently. It is an internal drive or enthusiasm that prompts one to take initiative.
Problem solving 	It is to identify problems and challenges, thereby trying to find practical solutions to solve them. It includes analyzing issues and implementing strategies to resolve them.
Teamwork 	It is to collaborate and work together as a team, and believe in the collaborative effort of different individuals who work towards the same goal.
Time management 	It is the ability to successfully complete tasks within specified deadlines and the ability of an individual to minimise distractions and unproductive activities.
Goal setting 	<p>It requires one to plan clear and achievable goals that can be accomplished and to provide motivation for one's personal or professional growth.</p> <p>A goal that an individual sets should be SMART.</p> <p>It should be specific, measurable, achievable, relevant, and time-bound.</p>

(continued...)

Skill	Explanation
Decision making 	It is an individual's ability to make informed decisions by evaluating options and consequences and taking the most appropriate way forward.
Stress management 	It is the coping mechanism that enables an individual to handle work efficiently, even under pressure or difficulties.

⚠ Error Alert!

Self-management Is About Complete Control:

This is a misconception because self-management is not about eliminating all uncertainties or challenges but rather about effectively navigating them. It involves understanding and regulating oneself, making informed decisions, and adapting to changing circumstances.

Positive Results of Self-management

Effective self-management leads to improved productivity, personal well-being, and the fulfilment of long-term goals of an individual. As we grow in life, we encounter various challenges which increase stress and confusion in our minds. Hence, managing ourselves is of paramount importance for us to strive through these difficulties and complete our tasks on time.

Here are a few benefits of self-management:

Helps in Achieving Goals Self-management skills help individuals to have clear objectives in mind and how they have to move towards the end goal. Whether they are academic, career-related, or personal aspirations, effective self-management is very important.

Time Efficiency Managing one's time is essential for all individuals to enhance one's productivity. One has to allocate time wisely for tasks which are at priority to avoid unnecessary delays.

Think and Tell

How do you manage yourself when you approach your exams, have to cover vast syllabus, and encounter stressful situations?

Benefits of Self-Management

- 01 Helps in Achieving Goals
 - 02 Time Efficiency
 - 03 Reduces Stress
 - 04 Improves Relationships
 - 05 Makes You More Organised
 - 06 Enhances Problem Solving Abilities
 - 07 Career Advancement
 - 08 Instills Discipline
- 

Reduces Stress Self-management will help one reduce the stress of pending tasks as they will be dealt with according to priority.

Improves Relationships Self-management helps manage one's relationships better due to better communication and emotional regulation. It also encourages people to build stronger social connections as they trust the self-managed individual and their capabilities.

Makes You More Organised If one plans one's schedules wisely and allots time slots to different activities in a day, one will be able to organise their resources. Being well-organised contributes to enhanced productivity and efficiency.

Enhances Problem-solving Abilities Problem-solving skills are enhanced by self-management. A self-managed and aware individual is better equipped to deal with conflicts and disagreements.

Career Advancement Self-management skills are significant for growth in the workplace. It will help the employees fulfil their responsibilities, make quick decisions, and work well in a team environment.

Instils Discipline Discipline is crucial as it will help one to maintain focus, not pay attention to distractions, and stay committed to one's tasks and goals.

Activity Time

Activity 1: Self-management Skills

(Individual Work)

Draw an outline of your right hand and label each finger with different self-management skills that you possess.

Activity 2: Strength and Weakness Analysis

(Individual Work)

Self-reflect to identify and analyse your strengths and areas to work on. Now, in an A4 sheet, create a table with two columns and list them down. Present them to the class. You may keep it at your study table at home to keep yourself motivated.

Chapter Checkup

A Select the correct option.

- 1 Knowing and understanding your strengths is associated with
 - a time management
 - b problem-solving
 - c self-awareness
 - d teamwork
- 2 Which of the following is not a self-management skill?
 - a bargaining
 - b self-motivation
 - c setting a goal
 - d problem-solving
- 3 Efficient time management involves
 - a expressing affirmations and optimistic thinking
 - b allocating time wisely to tasks
 - c working together as a team
 - d none of these

B Fill in the blanks with the most suitable words.

- 1 If you plan your schedules wisely, you will be able to your resources.
- 2 When you are, you know yourself as an individual, primarily your likes, dislikes, strengths, and weaknesses.
- 3 Believing in yourself that you can do any task is called
- 4 Self-management skills help individuals to have clear in mind.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 Self-management can help in overcoming challenges and difficulties.
- 2 Being able to manage yourself helps you deal with conflicts and challenges.
- 3 Self-management does not include stress management.
- 4 We can make informed decisions without evaluating our options.

D Answer the following questions. (*Solved*)

Q1. What do you mean by self-motivation?

A1. Self-motivation refers to the internal drive or enthusiasm which prompts an individual to take initiatives, complete tasks, and achieve goals independently.

If you are self-motivated, you try to put in efforts even when you face challenges and obstacles.

Q2. What are the benefits of self-management?

A2. Here are a few benefits of self-management:

- **Helps in Achieving Goals:** Self-management skills help individuals to have clear objectives in mind and how they have to move towards the end goal. Whether they are academic, career-related, or personal aspirations, effective self-management is very important.
- **Time Efficiency:** Managing one's time is essential for all individuals to enhance their productivity. You have to allocate time wisely to tasks which are of priority to avoid unnecessary delays.
- **Reduces Stress:** Self-management will help you reduce the stress of pending tasks as they will be dealt with according to priority.

Q3. Ranita has to appear for a unit test tomorrow. However, she has not been able to prepare well and is under a lot of stress at the last moment. List a few self-management skills that she could have used while preparing for her test.

A3. Ranita should have:

- Set specific goals and objectives that she wanted to achieve.
- Managed her time well and completed her preparation within the deadline.
- Been self-aware about her strengths and weaknesses. She should have allocated more time to the portion which she was least confident about.

Answer Key

A 1. c 2. a 3. b

B 1. organise 2. self-aware 3. self-confidence 4. objectives/goals

C 1. True.

2. True.

3. False. Self-management includes stress management.

4. False. We can make informed decisions by evaluating all our options.

6

Self-confidence

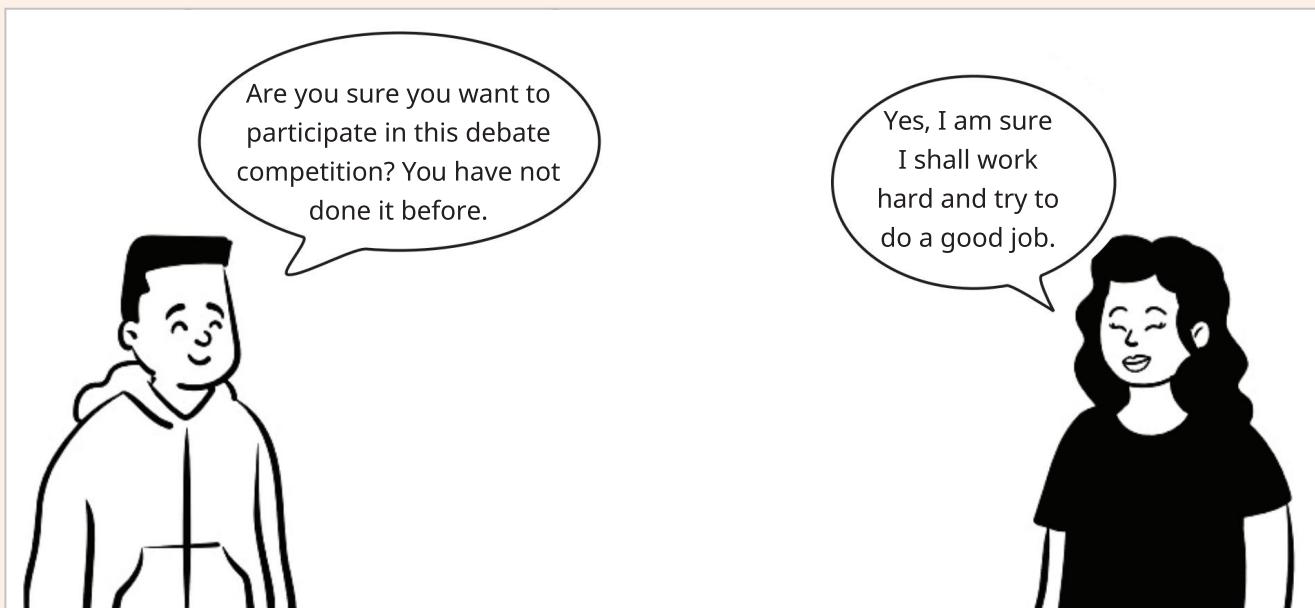
It is very important to have confidence in oneself because it helps us build our aspirations and navigate the journey of life. While one may possess intelligence, dedication, and brightness, the absence of self-confidence and initiative can make it difficult for others to recognise an individual's potential. Fortunately, there's encouraging news: it's achievable to enhance self-confidence by changing one's perspective and behaviour.

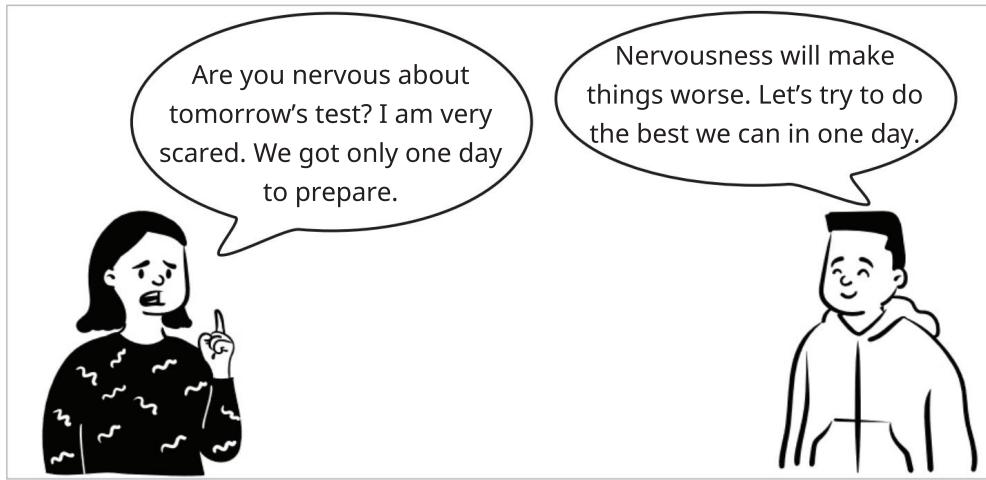
Self-confidence

Self-confidence involves believing in one's own judgement, abilities, and capabilities. It is reflected in one's thoughts, ideas, and behaviour. It allows an individual to tackle difficult challenges and communicate well with others. Confidence is very significant for the health and psychological well-being of an individual. A self-confident person believes that they are capable of achieving their goals and will be an asset to any organisation. They typically possess these three qualities:

1. Trust in their own capability
2. Readiness to accept new challenges
3. Willingness to take risks

The illustrations below demonstrate these three qualities that a confident person has.





Think and Tell

Can you think of an instance in your life where you showed all three attributes of a confident person?

Qualities of a Self-confident Person

Here are a few qualities that are commonly associated with self-confident people:

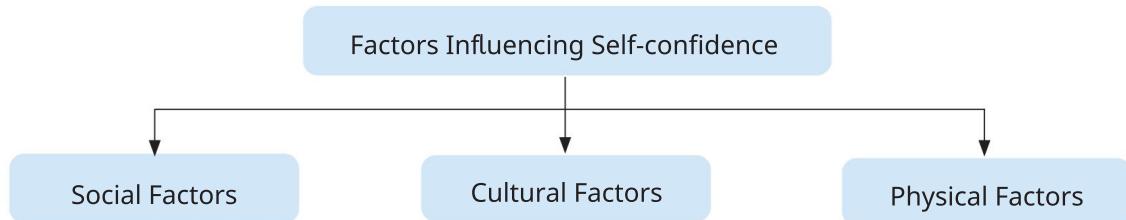
Quality	Example
Self-belief	Consider Mahendra Singh Dhoni as an example, who steered his team to a World Cup victory. He had faith in both himself and his team, ultimately guiding them to a remarkable triumph on cricket's global stage in 2011.
Hard work	Think about Dr APJ Abdul Kalam , who came from a humble background. He worked incredibly hard and became a scientist of legendary status. His dedication eventually took him all the way to becoming the President of India.
Commitment	Consider Nelson Mandela , who never wavered in his commitment to achieving independence for his country, even when he was imprisoned. His dedication and determination led his nation to freedom.
Positive attitude	Look no further than Malala Yousufzai , who faced immense challenges and even survived a life-threatening attack. Yet she maintains a positive outlook, continues her education, and fearlessly pursues her dreams, inspiring countless other young girls along the way.

Error Alert!

It is a common misconception that self-confidence is natural and unchangeable. The truth is that self-confidence can be developed through conscious efforts and strategies.

Factors Influencing Self-confidence

The three main factors that influence self-confidence are:



Social Factors

A society is a collection of people living in close proximity to one another. Our society comprises our family, neighbourhood, friends, relatives, school, and even strangers. Everyone we know, and even those we don't know, is a part of our society. The way we perceive ourselves and the world is significantly influenced by our earliest interactions with the society around us. In this way, society acts like a mirror, reflecting and shaping our self-perception. Therefore, society plays a vital role in moulding and nurturing our self-confidence.



Our sense of self can be impacted by the opinions of others, such as our parents, teachers, classmates, and friends. This can lead to an increase or decrease in self-confidence over time.

Below are a few examples illustrating how the society around us positively influences our self-confidence:

Example 1

Imagine being part of a football team. During an important match, you score a goal that contributes to your team's victory. Your teammates and coach congratulate you, acknowledging your skill and quick thinking. This positive feedback boosts your self-confidence in your abilities on the field. Consequently, you begin to believe in your capacity to contribute further to your team's success, encouraging you to take on more challenging plays and put in extra effort for future matches.

Example 2

There was a young artist named Maya who loved painting. She often created beautiful artwork at home. Acknowledging her talent, her parents displayed her paintings around the house and expressed their admiration for her creativity. Maya's parents also enrolled her in art classes to enhance her skills. This support from her parents created a nurturing environment where she started believing in her artistic abilities, ultimately boosting her confidence and leading to further development of her talent.

It is also crucial to be aware of situations where social factors can negatively impact our self-confidence. Below are a few examples where negative social influences from peers, teammates, and parents can contribute to decreasing your self-confidence in different areas of life.

Example 1

Consider Mariam, a passionate science enthusiast in school. However, science was often considered a subject for boys in her school, and her classmates often mocked her enthusiasm. As time passed, Mariam became more self-conscious and less confident in openly expressing her interest. The negative comments from her peers created social pressure that undermined her confidence in pursuing her passion for science.

Example 2

Now, let us look at a scenario involving Simran. Her parents had high academic expectations and constantly compared her to her older sibling, who excelled in school. Even when Simran achieved good grades, her parents expressed disappointment and suggested she could do better. Simran's ongoing comparisons and the absence of a supportive environment provided by her parents prompt her to question her values and capabilities, resulting in a decrease in her self-confidence.

The examples above highlight how external pressures, comparisons, and discouraging comments can weaken an individual's self-belief and confidence. Lack of attention, punishments, excessive criticism, and negative remarks can break a person's confidence. Therefore, it is essential to be mindful of how our actions and words influence the self-confidence of those around us.

Cultural Factors

The term “culture” describes the customs, beliefs, traditions, and values of a specific society, community, or ethnic group. Our cultural background shapes how we understand ourselves and the world around us. Hence, it naturally influences our self-confidence as well. Influences that come out of our culture, whether direct or subtle, can play a significant role in shaping our self-confidence. For instance, in some cultures, certain roles or professions may be traditionally associated with one gender, limiting the aspirations of individuals who do not fit these norms. These cultural norms can create self-doubt and hinder the development of self-confidence.



On the other hand, cultural factors can also boost self-confidence. Embracing and celebrating one's cultural identity can nurture a sense of belonging and pride. When individuals are encouraged to celebrate their cultural heritage, it can lead to an enhanced sense of self-worth and self-confidence. India is a culturally diverse country, and therefore, we need to delve into how cultural factors can influence our self-confidence.

Below are a few examples illustrating how cultural factors influence our self-confidence:

Example 1

Let's look at Priya, who comes from a community that highly values music and dance. Priya's family and community support her interest in performing arts, providing her with opportunities to learn and showcase her talents. This positive cultural influence strengthens Priya's self-confidence, as she feels valued and empowered to pursue her passion.

Example 2

Consider Rahul, born into a community with a long line of doctors. The cultural pressure to follow this legacy becomes overwhelming, and even though Rahul's heart is in the arts, he feels compelled to pursue medical sciences. This conflict between his cultural expectations and personal interests impacts his self-confidence in making a choice that aligns with his passion.

In conclusion, cultural factors play a significant role in shaping our self-confidence. They can either empower us to embrace our uniqueness or limit us by imposing rigid expectations. By understanding how culture influences our self-perception, we can understand its impact and work towards building our self-confidence.

Physical Factors

Physical factors refer to elements like physique, mental state, and appearance. Our physical well-being, how we present ourselves, and how we perceive our appearances all contribute to influencing our self-confidence. It is crucial to be aware of how physical factors not only impact your confidence but also that of others. Hence, to create a self-confident society, it is important to embrace the unique appearances of people around us and treat those with physical disabilities with kindness and equality.



Here are a few examples to understand the influence of physical factors on a person's self-confidence:

Example 1

Let us take a look at Neha, who makes it a habit to exercise regularly and eat nutritious meals. Her physical well-being directly affects her confidence levels. Regular exercise boosts her energy and improves her mood, which, in turn, enhances her self-confidence in various aspects of her life.

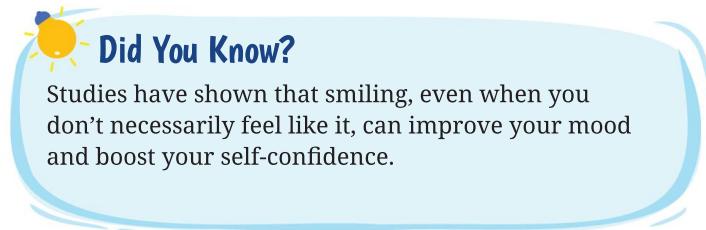
Example 2

Meet Rajeev, a determined individual with a physical disability. Due to his disability, everyday activities like walking demand additional effort from him. Rajeev's confidence sometimes falters when he notices people treating him differently or excluding him. These moments make him doubt himself and reduce his self-confidence when interacting with others and going out.

Example 3

Now, let us introduce you to Gita, a girl who loves art and music. Gita often comes across images on the internet of celebrities with seemingly flawless skin. She feels pressured to look just like them to fit in and be considered attractive. As Gita compares herself to these impractical beauty ideals, she begins to doubt her appearance. This self-doubt affects her confidence, and she starts avoiding social gatherings and activities that she used to enjoy.

These physical factors vary from person to person, contributing to the development, enhancement, and maintenance of self-confidence. Other factors, such as self-esteem, personality traits, and the environment, can also play a role in influencing self-confidence.



Factors That Decrease Self-confidence

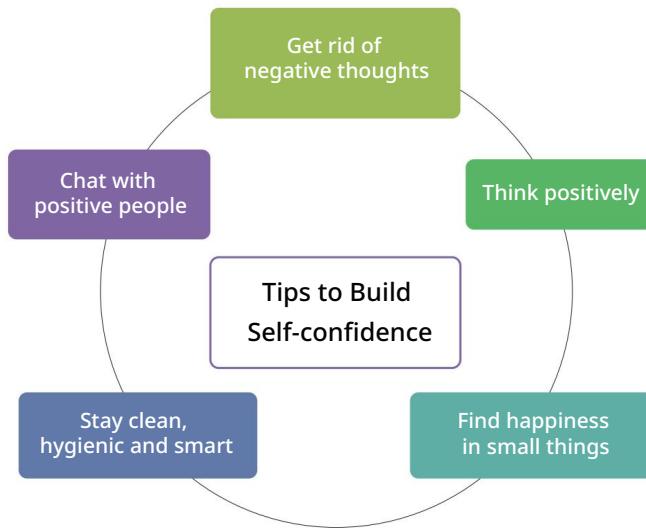
There are some factors that work against us and do not help us boost our confidence.

- Negative Self-belief:** When we convince ourselves that we cannot accomplish a certain task or goal, it creates self-doubt. This negative self-belief undermines our confidence and prevents us from even attempting to succeed. Over time, this mindset can result in opportunities being overlooked and a lack of progress.
- Dwelling on Past Mistakes:** Continuously replaying our past mistakes and dwelling on them can be harmful to our self-confidence. While it is important to learn from our errors, focusing on them too much and feeling bad about them can create a cycle of self-criticism and self-doubt.
- Fear of Failure:** Expecting instant success and avoiding situations where failure is a possibility can negatively impact self-confidence. When we fear failure, we may avoid trying new things or pursuing our goals, and this avoidance fuels the belief that we cannot succeed.
- Negative Surroundings:** Being surrounded by individuals with a consistently negative attitude can influence our mindset. Negative speech and pessimistic viewpoints can seep into our thoughts and self-perception, impacting our self-confidence. Constant exposure to negativity can lead us to question our abilities and values.

Thus, building self-confidence involves challenging negative self-beliefs, understanding past mistakes as learning experiences, embracing the possibility of failure as a part of growth, and seeking positive and supportive influences.

Tips to Build Self-confidence

Using these tips and strategies in our lives can make a remarkable difference in how we perceive ourselves and our capabilities. It is important to remember that building self-confidence is a journey that requires patience, practice, and a willingness to embrace both successes and failures.



Get Rid of Negative Thoughts Getting rid of negative thoughts is a significant step in building one's self-confidence and maintaining it. A person has to change their mindset and shift their focus to more positive things in life. One should be aware of one's negative thoughts and how they get triggered. One should also look for the causes of these thoughts whether they are based on facts, some sort of assumption, or irrational fear. Then, an individual should give themselves positive self-talk and change these negative thoughts into positive ones. One should also try to set realistic and achievable expectations and goals; otherwise, it would create a lot of problems. Meditation and practising a hobby enable one to get rid of negative thoughts.



For example: Zoya is a graphic designer who faced some difficulties at work. She was getting a lot of negative thoughts about quitting her job. However, she did not let those negative thoughts get the better of her and choose to focus on the lessons she learned from her experience. She acknowledged the areas that needed improvement and took active steps to enhance her skills. This not only helped her overcome challenges but also enhanced her self-confidence in her professional abilities.

Think Positively Positive thinking involves focusing on the positives, understanding, and working towards improvement rather than focusing on the negatives. This mindset will help a person believe in their abilities, take on challenges, and achieve their goals. When faced with challenges, a positive mindset enables an individual to view difficulties as natural and perhaps even as opportunities for growth. A positive attitude has a direct impact on their energy levels and overall performance. One is more likely to feel motivated and enthusiastic about their tasks. It will enhance their ability to communicate effectively, collaborate with people, and adapt to changing environments. Thus, a positive mindset promotes overall well-being and spreads happiness to those around us. When one focuses on the positives in their life, they experience lower stress levels, improved mental health, and a greater sense of contentment.



For example: Charan had set a goal to improve his public speaking skills. He began by participating in small group discussions and gradually progressed towards giving presentations. After each successful public speaking experience, Charan took a moment to acknowledge his achievement. Even when he fumbled during a presentation, he recognised it as a chance to learn and become better. Over time, Charan's efforts and positive mindset not only improved his public speaking skills but also boosted his self-confidence.

S	Start Your Day in a Positive Way: Begin each day by setting a positive tone. Reflect on something one is grateful for. One can even read or watch something that boosts their mood.
M	Manage Time to Relax: Allocate time for relaxation and self-care. Engage in activities that bring joy and calmness, like reading, taking walks, or practising deep breathing exercises. By managing stress, one can create room for a positive mindset to flourish.
I	Imagine the Best in Any Situation: Instead of dwelling on potential failures, focus on the opportunities that lie ahead.
L	Learn to Take Feedback in a Positive Way: Consider feedback as an opportunity for learning and growth. For example, if a teacher provides feedback on an assignment, consider it valuable guidance to improve one's work.
E	Express Gratitude: Regularly express gratitude for the good things in your life. Whether it is a supportive friend or a good book, acknowledging these aspects cultivates a positive perspective.

Positive thinking is a powerful tool that can shape one's experiences and outlook on life. By embracing the 'SMILE' acronym, one can actively nurture a positive attitude and get numerous rewards.

Find Happiness in Small Things One should try to appreciate the little joys in life, as it will cultivate a positive mindset and enhance one's self-confidence. An individual can reflect on small positive things in their daily life, as it would boost their mood, help them appreciate present moments, and increase self-awareness. One can have meaningful interactions with one's friends and family, spend time in nature, celebrate minor achievements, pursue hobbies and activities that they enjoy, and be delighted by the simple everyday pleasures of life. Everyone should remind themselves of the positive aspects of their lives and the people who support them unconditionally.



For example: Riya enjoys her life to the fullest even amid her hectic schedule as a finance manager at a marketing firm. She finds happiness in her cup of tea, spending time with her parents, and enjoying the fresh breeze while taking a walk in the park. This helps her to remain motivated and enhances her confidence.

Stay Clean, Hygienic and Smart Every individual should maintain good personal hygiene, cleanliness, and a well-groomed appearance. It will boost their confidence and help them communicate well with others. It will reduce any sort of doubt that you have in your mind regarding your appearance. Everyone must maintain a daily routine to take care of their hygiene and also try to dress appropriately according to the context of the situation. Regular physical activity and having a balanced diet will contribute to overall well-being and appearance. One should embrace their unique qualities and not try to make comparisons with other people.



Chat With Positive People Positive individuals provide encouragement, inspiration, and support, which helps other people feel more confident. They will help others believe in their abilities, reinforce their achievements, and create a supportive and uplifting atmosphere. They can also serve as role models and inspire others to adopt an optimistic attitude. It is beneficial to take feedback from positive individuals, as they can be constructive and guide us to develop our skills. Positive conversations reduce negativity and unnecessary stress.

These strategies or tips can be beneficial for all individuals and boost their self-confidence. It is a gradual process, and it is normal to have moments of self-doubt. But by adopting these tips consistently, an individual can develop a more positive mindset.



Activity Time

Activity 1: Role Play on Building Self-confidence

(Pair Work)

In pairs, participate in a role-play exercise to practice building self-confidence in a job interview scenario. Each pair will consist of one "interviewer" and one "interviewee." The interviewer's role is to ask relevant job interview questions and observe the interviewee's responses, confidence, body language, and communication skills. The interviewee's role is to respond to the questions, showcase confidence, maintain positive body language, and effectively communicate their strengths. Each pair will perform the role-play in front of the whole class.

Activity 2: Chart on Positive Affirmations

(Group Work)

Positive affirmations are empowering statements that can boost self-confidence and set a positive mindset for the day ahead. Each student will be creating their own set of positive affirmations/metaphors. These affirmations will serve as reminders of their strengths, capabilities, and positive qualities. Each affirmation should begin with a positive statement, such as "I am capable of handling challenges", "I believe in myself", and "I am confident in expressing my thoughts and ideas". Each student has to write at least two affirmations on the chart paper. The completed chart should be put on the class board.

Activity 3: Helping Others

(Group Work)

Form a group of three to four students. Look around your school and neighbourhood for people or animals who need your assistance. Talk about your experience in the class and how you felt after extending your help.

Chapter Checkup

A Select the correct option.

- 1 How does a person's self-confidence get impacted?
 a By getting rid of negative thoughts
 b By chatting with negative people
 c By finding happiness in small things
 d By thinking positively
- 2 Which of the following is NOT a quality of a confident person?
 a Trust in their own capability
 b Readiness to accept challenges
 c Fear of taking risks
 d Willingness to learn
- 3 Which of the following factors impact your self-confidence?
 a Physical
 b Cultural
 c Social
 d All of these

B Fill in the blanks with the most suitable words.

- 1 Regularly express for the good things in your life.
- 2 Embracing one's identity can foster a sense of belonging and pride.
- 3 Physical factors refer to elements like physique, mental state, and
- 4 Positive individuals provide, inspiration and support, which help other people feel more confident.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 Self-confidence is natural and unchangeable.
- 2 Dwelling on past mistakes can harm self-confidence.
- 3 Fear of failure can positively impact self-confidence.
- 4 Society and culture have a strong influence on an individual's self-confidence.

D Answer the following questions. (*Solved*)

Q1. Define self-confidence.

A1. Self-confidence involves believing in one's own judgement, abilities, and capabilities. It is reflected in one's thoughts, ideas, and behaviour. It allows you to tackle difficult challenges and communicate well with others. A self-confident person believes that they are capable of achieving their goals and will be an asset to any organisation. They typically possess these three qualities:

- Trust in their own capability.
- Readiness to accept new challenges.
- Willingness to take risks.

Q2. How can physical factors influence a person's self-confidence?

A2. Physical factors like health, appearance, and physical abilities can significantly influence self-confidence. Our physical well-being, how we present ourselves, and how we perceive our appearances all contribute to influencing our self-confidence. For example, if a person is in good physical health and feels confident about their appearance, they may have high self-confidence. Conversely, physical challenges or disabilities may impact self-confidence if the individual perceives these challenges as limitations.

Q3. Jayesh works as a consultant at Recent Publishing House. He is feeling very low these days and not able to bring any new ideas to the table. Due to his messed-up professional life, his personal life is also getting impacted. How do you think he can regain his self-confidence?

A3. Jayesh can regain his self-confidence by:

- Getting rid of negative thoughts that are arising in his mind.
- Thinking positively and ensuring himself that he will be able to perform well in the future.
- Being grateful for positive things in his life.
- Enjoying small things in his daily routine and spending time with his family.
- Going out for nature walks which will help him to think clearly and release the pressure from his mind.
- Having conversations with positive people around him who will encourage and inspire him.

Answer Key

A 1. b 2. c 3. d

B 1. gratitude 2. cultural 3. appearance 4. encouragement

C 1. False. Self-confidence can be developed through conscious efforts and strategies.

2. True.

3. False. Fear of failure negatively impacts self-confidence.

4. True.

Unit Reflection

Key Terms

Self-awareness: It is to know oneself as an individual—be it one's likes, dislikes, strengths, or weaknesses, and reflect on one's experiences to gain valuable insights into their personality.

Self-confidence: Self-confidence involves believing in one's own judgement, abilities, and capabilities. It is reflected in one's thoughts, ideas, and behaviour.

Self-management: Self-management is the capability of an individual to exercise control over one's feelings, ideas, thoughts, emotions, and behaviour to achieve the desired goals in both personal and professional settings.

Self-motivation: It is an intrinsic feeling that encourages one to complete tasks and achieve goals independently. It is an internal drive or enthusiasm that prompts one to take initiative.

Stress management: It is the coping mechanism that enables an individual to handle work efficiently, even under pressure or difficulties.

Time management: It is the ability to successfully complete tasks within specified deadlines and the ability of an individual to minimise distractions and unproductive activities.

Things to Remember

- Various self-management skills that an individual should possess are self-awareness, self-confidence, self-motivation, problem solving, teamwork, time management, goal setting, decision-making, and stress management.
- Effective self-management helps in achieving goals, managing one's time, reducing stress, making a person more organised, improving relationships, enhancing problem solving abilities, career advancement and instilling discipline.
- A self-confident person is ready to accept new challenges, willing to take risks, and has trust in their own capabilities.
- A few qualities that are commonly associated with self-confident people are self-belief, hard work, commitment, and a positive attitude.
- The three main factors that influence self-confidence are social, cultural, and physical.
- There are some factors that work against us and do not help us boost our confidence, like negative self-belief, dwelling on past mistakes, fear of failure, and negative surroundings.
- To build self-confidence, one should think positively, stay clean, hygienic and smart, find happiness in small things, chat with positive people, and get rid of negative thoughts.

Test Your Knowledge

A. Select the correct option.

1. is to know about one's likes, dislikes, strengths, and weaknesses, and reflect on one's experiences.
a. Self-confidence b. Self-awareness
c. Self-management d. Self-motivation
2. Which factor can decrease an individual's self-confidence?
a. Dwelling on past mistakes b. Positive surroundings
c. Positive self-belief d. No fear of failure
3. Which of the following is not a self-management skill?
a. Teamwork b. Time management
c. Decision making d. Taking a lot of stress
4. A benefit of managing one's own self can be:
a. can't achieve goals b. time efficiency
c. can't solve problems d. no discipline in life
5. Which of the following is not a quality of a self-confident person?
a. Self-belief c. Hard work
b. Negative attitude d. Commitment

B. Fill in the blanks with the most suitable words.

1. is the capability of an individual to exercise control over one's feelings, ideas, thoughts, emotions, and behaviour to achieve the desired goals.
2. The factors which impact self-confidence are social,, and physical.
3. SMART goals stand for specific, measurable,, relevant, and time-bound.
4. A is a collection of people living in close proximity to one another.
5. is the ability to successfully complete tasks within specified deadlines.

C. State whether the following is *True* or *False*. Correct the statements that are false.

1. Self-management makes a person trustworthy and reliable.
2. Being surrounded by individuals with a consistently negative attitude can influence our mindset.
3. One should not appreciate the little joys in life.
4. Self-management is about eliminating all uncertainties or challenges.
5. Self-confidence is a multi-faceted concept that is not influenced by any factor.

D. Short answer-type questions.

1. Define self-management.
2. How will staying smart, hygienic, and clean affect a person's self-confidence?
3. What are a few qualities that a self-confident person possesses?

E. Long answer-type questions.

1. How can social factors impact an individual's self-confidence?
2. What are the self-management skills that can help a person manage his overall personality?
3. Give a few tips to build self-confidence in an individual.

F. Competency-based questions.

1. Tanuj works as an associate product analyst in a multinational firm. He has learnt to manage himself very well. How will these skills help him to ensure that he is more productive than his colleagues?
2. Kashika and her colleagues share a great bond. They share their emotions, achievements, and failures with each other. Kashika has begun to notice that her work friends mock the failures of others. So much so that she stopped sharing things with them. This had an impact on her, and she began to feel insecure and underconfident when being around them. What is the factor that has impacted Kashika's confidence?

7

Role of ICT

The modern society is greatly driven by Information and Communications Technology. ICT stands for Information and Communication Technology. It is a broad term that includes a wide range of technologies and tools used for handling, processing, storing, and communicating information. All communication devices, cell phones, radio, television, and computers along with satellite systems, are ICT tools.

It is a combination of wired and wireless networking tools that enables receiving and transmitting information and communicating through varied mediums.

Key Components of ICT

The following are the key components of ICT:

Computers Desktops, Personal computers, laptops, tablets, and smartphones help in processing and storing data.

Software Software applications like operating systems, OpenOffice applications (Writer, Calc, Impress, Base), multimedia tools, web browsers, and specialised applications perform specific tasks and help run ICT devices.

Internet The Internet is a global network that connects computers and servers. It allows users to get information, communicate, and share data across the world.

Telecommunication Communication technologies like telephones (landlines and mobiles), messaging, emails, video conferencing, and social media platforms are part of ICT.

Networking Computer networks, both wired and wireless, simplify the exchange of information between devices and across the internet. Wired (e.g., Ethernet) or wireless (e.g., Wi-Fi) networking enables the creation of local area networks (LANs) within homes or businesses and a wide area networks (WANs) that connect computers across larger geographical areas.

Data Storage Hard drives, solid-state drives (pen drives, SD cards), cloud storage (Google drive, iCloud), and external storage devices help ICT in storing data.



Think and Tell

When was the last time you saw or used a landline phone to make a call?

Error Alert!

The Cloud is Actually in the Sky! Cloud, literally means the sky, but in computer language, the cloud refers to remote servers and data centres located all around the world.

Information Security It involves measures and protocols needed for protecting the information and ensuring the confidentiality, integrity, and availability of data and information. It helps prevent data breaches, unauthorised access, and cyberattacks.

Multimedia ICT allows integration of text, images, audio, video, and interactive elements, contributing to richer content experiences.

Think and Tell

You and your friends are making a presentation on a software application. What are the things that you will use to make your presentation interesting?

Role of ICT

ICT tools have become an integral part of our lives and have a huge impact on the way we live, work, and interact with each other.

Importance of ICT in Personal Life

ICT has deeply impacted our personal lives. It has made possible the convenience, efficiency, connectivity, and accessibility of information and resources at every doorstep. It has become part of our lives at varied levels.

Purpose	Tools
Connecting with people	Smartphones, Messaging Apps, Social Media Platforms.
Entertainment	Television, Radio, Tablets, Computer Applications, and Web Browsers for watching movies, listening to music and news.
Learning and information	Internet enables us to watch educational videos, to find answers to questions, learn new things online.
Online Shopping	Applications that allow people to shop easily from the comfort of their homes.
Organisation	Tools like note-taking and digital calendars enhance the productivity of the people.
Money management	Online banking apps have made sending and receiving of money secure and convenient. It can be used for paying bills.
Making friends	Social media platforms have helped people connect with those who share common interests and make new friends.
Healthy living	Many health and fitness-related apps have allowed people to keep track of their daily steps and oxygen levels.
Travel	ICT has enabled people to travel across the globe by easy booking of train/bus/airplane tickets and hotels.

Importance of ICT at Workplace

ICT plays a very significant role in our workplace and has been contributing immensely to the economy through its seamless integration of varied sectors like education, business, communication, entertainment, agriculture, and research. At the workplace, it contributes to improved efficiency through different computer software and applications. These enable keeping important data safe and organised; collaborating with others on projects; training and learning skills needed for performing the job effectively; and presenting data and information using multimedia elements.

Example: In the education sector, the integration of ICT tools has enhanced the learning experiences through the use of videos, audios, images, and online quizzes while making learning more interactive. It provides a wide range of content for the students and teachers to learn from. They enable teachers to record students' data and map their learning journey.

Sectors	Use of ICT
Healthcare	It helps in maintaining electronic health records, telemedicine, testing, and consultancy for patients living far away.
Banking and finance	It has enabled online banking, making payments through mobile apps, and managing finances efficiently.
Agriculture	It helps in weather forecasting and enables farmers to do research and training in the field of agriculture for better farming practices.
Manufacturing and industry	ICT can help automate the production process and make use of the latest technologies and machinery for mass production and manufacturing.
Business	Tools like note-taking and digital calendars enhance the productivity of the people.
Advertising and marketing	It enables marketing and advertising for products and services on online platforms through social media campaigns and analytics for advertising agencies.
Fashion and retail	It has helped in the online selling of goods and services to customers through applications, allowing virtual try-ons, and supply chain management for the fashion industry.

We are highly dependent on these tools and technology for our day-to-day life and for the efficient and effective functioning of our work. The constant development and integration of these technologies have transformed the way we live, work, learn, and interact, thereby improving our quality of life.

ICT Tools

ICT tools like smartphones, tablets, radio, televisions, laptops, and computers are part and parcel of modern society. The accessibility of these tools has made our daily chores easier and improved our quality of life.

Smartphones Mobile phones are portable communication devices that allow people to make and receive calls and send and receive messages. On the other hand, smartphones are advanced mobile phones. They allow one to do things one normally does on a computer. It has a touchscreen that permits users to browse the internet, take pictures, play games, and use multiple apps with touch. It has many helpful features like note-taking, voice assistance, GPS for maps, setting reminders, and so on. They have multiple apps for communications, entertainment, shopping, and banking purposes.



making them useful for work-related tasks. They are suitable for a wide range of activities, making them popular among individuals of all ages for both personal and professional use.



Tablets Tablets are portable computing devices that are bigger than smartphones but smaller than laptops. They have a flat, rectangular design with a touchscreen interface. Unlike laptops, they do not have a physical keyboard. Tablets are lightweight, easy to carry, and have a wide range of functions. They also have productivity applications like word processors, spreadsheets, and presentation software,

Did You Know?

Google's original name was "Backrub." It was changed to "Google" in 1997, inspired by the word "googol," which refers to the number 1 followed by 100 zeros, representing the vast amount of information the search engine aimed to organise.

Television Televisions, also known as TVs, are being used for a long time. They were invented in 1927, and since then, they have been making a significant impact on our society by influencing people, shaping culture, entertaining, and giving information. Television uses moving pictures with sounds. It has brought entertainment, news, and educational shows inside every house. Televisions have evolved over the years, and now we also have smart TVs that can connect to the internet and provide a wide range of options from online sources.

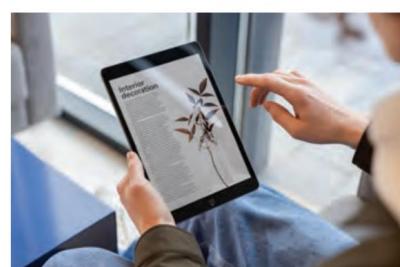


Radio Radio is one of the oldest and first ICT tools. It allows people to listen to audio broadcasts for entertainment, information, weather forecasts, commentary, and educational purposes. Radio uses radio waves to broadcast audio in long range. With the advent of the internet, radio has become a more interactive medium, allowing users to access content from anywhere and at any time, at their convenience.



Email Electronic Mail, commonly known as email, enables the exchange of digital messages between individuals and organisations. It has become a primary method of communication in both personal and professional environments. One can have access to their email on their smartphones, laptops, and tablets. It requires an internet connection and allows users to attach files in the form of images, audio, video, or documents.

E-newspaper An e-newspaper, or electronic newspaper, is a digital version of a traditional print newspaper that is accessible through electronic devices such as computers, tablets, smartphones, and e-readers. This allows readers to access news content anytime and anywhere, whether they're commuting, travelling, or simply relaxing at home. E-newspapers can provide real-time updates and live coverage through text updates, images, and even live video streams.



E-readers An e-reader, short for electronic reader or e-book reader, is a specialised electronic device designed primarily for reading digital books and other written content. It serves as an ICT tool with a focus on helping readers enjoy the experience of reading at their own convenience. This is an environment-friendly initiative, allowing readers to have access to a library of books at their fingertips.

Difference Between ICT Tools

Aspects	Smartphones	Tablets	Television	Radio
Type	Portable audio-visual device	Portable audio-visual device	Audio-visual device	Audio broadcast
Communication type	Two-way	Two-way	One-way	One-way
Screen	Small touchscreen, that can fit in pocket	Bigger than smartphones and tablets, touchscreen	Larger than smartphones and tablets, may or may not be touchscreen	No screen

Portability (Easy to carry)	Yes	Yes	No	Yes
Applications	Uses many applications	Uses many applications	May or may not use some applications	No applications used
Purpose	Communication, Entertainment, Information Access	Communication, Entertainment, Information Access	Entertainment, Information Access	Audio Content for Communication, Entertainment, Information Access
Internet	Yes	Yes	May or May not SMART TV uses internet	May or May not Podcasts are forms of radio broadcasts that use internet
Storage	Comes with different storage capacity	Comes with higher storage capacity	No storage capacity	No storage capacity
Battery	Operates on rechargeable battery	Operates on rechargeable battery	Operates on power, not battery	Operates on power, not battery
Economical	Comes in all price ranges	Expensive than smartphones	Comes in all price ranges	Cheapest of all four
Accessibility over large distance	Can be accessed from places with network and internet coverage	Can be accessed from places with network and internet coverage	Accessible only within a given room or area	Can be accessed through satellite or internet coverage
Content control/moderation	No control	No control	Controlled by Censor Board	Controlled by Telecom Regulartory Authority
GPS	Yes	Yes	No	No

Activity Time

Activity 1: ICT in Routine Life

(Group Work)

In a group of 4–5 students, perform a role play presenting the important role of ICT tools in our personal and work lives. Each role-play should include at least two scenes showing the personal scenario and a work environment.

Activity 2: Importance of ICT

(Group Work)

Divide the class into small groups of 4–5 students. Ask the groups to choose one of the two topics and discuss the role of ICT. They shall make a poster/ collage on the selected topic based on the ideas discussed.

Topics:

Role of ICT at Workplace

Role of ICT in personal life

Activity 3: Advertising ICT Tools

(Group Work)

In a group of 4–5 students, prepare a sales pitch for one of the ICT tools. Highlight the key advantages of the chosen tool in your presentation. You may prepare a poster to support your presentation.

Chapter Checkup

A Select the correct option.

- 1 What is the main benefit of using ICT for information access?
 - a Limited access to information
 - b Instant access to a wide range of information
 - c Offline access only
 - d Access to information only during the daytime
- 2 Which aspect of personal life can be enhanced by ICT through online courses and tutorials?
 - a Physical fitness
 - b Social interactions
 - c Language learning
 - d Shopping experience
- 3 What is the significance of ICT in emergency situations?
 - a No relevance in emergencies
 - b Provides only entertainment during emergencies
 - c Offers access to emergency services, information, and resources
 - d Causes more problems during emergencies

B Fill in the blanks with the most suitable words.

- 1 The use of ICT tools has led to the rapid exchange of information and across the globe.
- 2 ICT tools have improved in the workplace, allowing teams to work together efficiently.
- 3 One of the potential risks of using ICT tools is theft, where sensitive information is accessed without authorisation.
- 4 is an ICT tool that enables users to search for information on the World Wide Web.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 E-readers are electronic devices designed for playing games and watching movies.
- 2 ICT has no role in managing personal finances or budgeting.
- 3 Remote work and online learning are made possible by ICT tools like video conferencing and collaboration platforms.
- 4 ICT primarily focuses on communication and does not impact other areas of life.

D Answer the following questions. (*Solved*)

Q1. Explain the meaning of "ICT tools" and provide two examples of commonly used ICT tools.

A1. ICT tools also known as Information and Communication Technology, is a broad term for various technological devices, software applications, and platforms that help us to communicate, access information, process data, and perform various tasks in personal, professional, educational, and other sectors.

Two examples of commonly used ICT tools are:

Smartphones: Smartphones are versatile ICT tools that combine communication, computing, and connectivity features. They allow users to make calls, send messages, access the internet, use apps for various purposes, take photos and videos, and perform a wide range of tasks.

Email Services: Email services like Gmail, Outlook, and Yahoo Mail provide platforms for sending and receiving electronic messages over the Internet. They enable communication through text, attachments, and media files, making it easy to correspond professionally and personally.

Q2. Describe how ICT tools have revolutionised the healthcare sector.

A2. ICT tools have sparked a profound revolution in the healthcare sector, transforming how medical services are delivered, accessed, and managed. Telemedicine platforms and video conferencing enable remote consultations, connecting patients with healthcare professionals, regardless of location. Electronic Health Records (EHRs) digitise patient information, streamlining data management, reducing errors, and improving care coordination. Smart watches and mobile apps empower patients to monitor vital signs and chronic conditions in real-time, allowing for proactive interventions.

Q3. Differentiate smartphones and tablets on the basis of any three aspects.

A3. Smartphones and tablets are different from each other in the following ways:

Aspects	Smartphones	Tablets	Television	Radio
Purpose	Communication, Entertainment, Information Access	Communication, Entertainment, Information Access	Entertainment, Information Access	Audio Content for Communication, Entertainment, Information Access
Economical	Comes in all price ranges	Expensive than smartphones	Comes in all price ranges	Cheapest of all four
Storage	Comes with different storage capacity	Comes with higher storage capacity	No storage capacity	No storage capacity

Answer Key

A 1. b 2. c 3. c

B 1. communication 2. efficiency 3. cyber/data 4. Internet

C 1. False. E-readers are electronic devices designed for reading digital books and other written content.

2. False. ICT has a significant role in managing personal finances or budgeting.

3. True.

4. False. ICT has a huge impact on the way we live, work, and interact with each other.

8

Components of Computer System

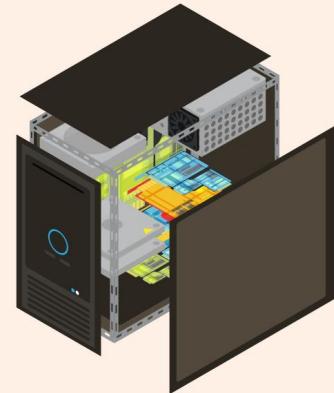
A computer system comprises various interdependent components that work collectively to execute tasks and process data. Understanding these components is crucial to understanding the functioning of a computer system.

Basic Components of a Computer

Following are the basic components of a computer system:

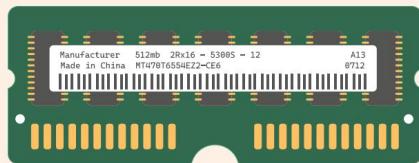
Central Processing Unit (CPU)

The Central Processing Unit (CPU) is known as the brain of the computer. It executes instructions and performs calculations. It consists of the Arithmetic Logic Unit (ALU), the Control Unit (CU), and the Memory Unit (MU). The ALU performs arithmetic and logical operations, while the Control Unit coordinates and manages the various components of the CPU.



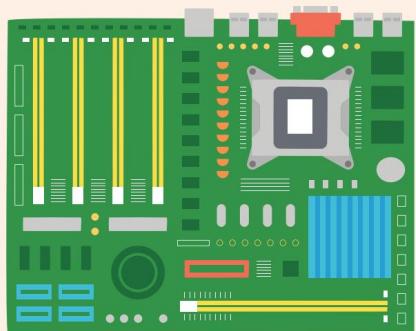
Memory

Memory in a computer system is vital for storing and accessing data quickly. There are two types of memory: Random Access Memory (RAM) and Read-Only Memory (ROM). RAM is a type of computer memory that is used to store data and the machine code that is currently being used. It is a volatile memory, which means that data is stored temporarily in RAM and lost forever when the computer is turned off. On the other hand, ROM is a type of memory from which information can only be read. It is a non-volatile memory, as data is stored permanently in ROM and cannot be altered.



Motherboard

The motherboard is the primary circuit board that connects all the essential components of a computer system. It houses the CPU, memory, and the connectors for peripheral devices such as the hard drive, CD/DVD drive, and graphics card.



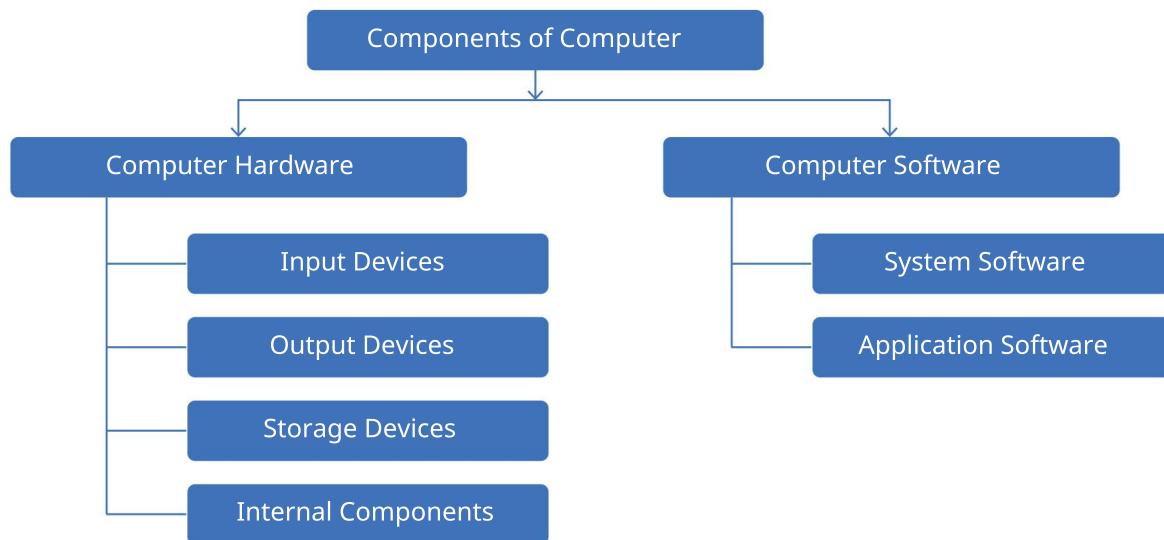
Storage Devices

Storage devices are used for long-term data storage. These can include Hard Disk Drives (HDDs), Solid-State Drives (SSDs), external storage devices like USB drives, and external hard drives.



Hardware and Software of a Computer System

Computer systems rely on both hardware and software components, which are integral for ensuring compatibility with the users.



Hardware

Hardware refers to the physical components of a computer system. These are physical devices that can be seen or touched. Computer hardware can be categorised into different types—input devices, output devices, storage devices, and internal components.

- Input Devices:** These devices enable the users to input data and communicate with the computer system. Some examples of input devices include the keyboard, a mouse, and a scanner.
- Output Devices:** These devices display the results of user-performed tasks. Some examples of output devices are monitors, printers, and speakers.
- Storage Devices:** These devices are used to store data and are often referred to as secondary storage. Some examples of storage devices include CDs, DVDs, and hard disks.
- Internal Components:** These critical hardware components are integral parts of the computer system. Some examples of internal components include the CPU and the motherboard.

Software

Software is a set of instructions or programs given to the computer to complete a task. It is a part of the computer that cannot be touched or felt. Some examples of software are Windows, OpenOffice Writer, Microsoft Excel, PowerPoint, Google Chrome, Photoshop, and MySQL.

There are two types of computer software—system software and application software:

- System Software:** System software controls the overall working of a computer. It manages all the input and output operations of the computer. For example, the operating system is a part of the system software that makes a computer run smoothly.
- Application Software:** Application software facilitates fundamental computer operations. It performs specific tasks for users. This category includes word processors, spreadsheets, and a variety of other task-specific programs. There are two types of application software: general-purpose software and customised software.

Did You Know?

The operating system manages computer hardware and software. It provides the users with an interface through which they communicate with the computer.

Role and Functions of RAM and ROM

In computer systems, the memory is a hardware component of the system that stores data and information. The computer memory can be classified into two main types—primary memory and secondary memory. The primary memory is further divided into two main types—RAM and ROM.

Random Access Memory (RAM)

RAM, or Random Access Memory, serves as the primary memory in a computer system. It temporarily holds data and instructions that the computer is currently processing. RAM allows the CPU to access data quickly, enabling efficient multitasking and the smooth execution of programs.

Since it is a volatile memory, RAM loses its data when the computer is powered off. RAM, also referred to as the main memory of the computer, enables the CPU to have direct access to all its memory cells. RAM is mainly composed of semiconductive materials and typically takes the form of integrated circuits (ICs).

Read Only Memory (ROM)

ROM, or Read Only Memory, constitutes a primary computer memory that is used to store instructions and programs that do not require any changes, such as the basic input/output system (BIOS). This storage aids in creating computer firmware, and data is generally stored during the manufacturing process. Similar to RAM, ROM is a type of semiconductor memory formed as integrated circuits (ICs).

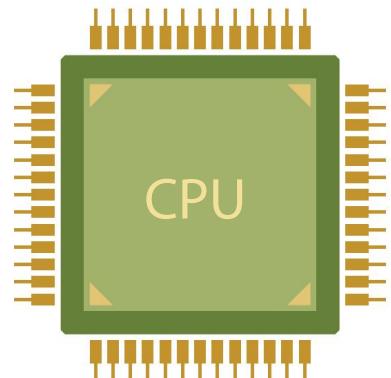
Data stored in ROM is permanent, signifying that it is non-volatile and retains its data even when the computer is powered off. Unlike RAM, the CPU can only read data from the memory cells of ROM but is unable to modify it.

Difference Between RAM and ROM

Parameter	RAM	ROM
Full form	RAM stands for Random Access Memory.	ROM stands for Read Only Memory.
Definition	RAM is a primary memory of the computer that temporarily stores data and instructions on which the CPU is currently working.	ROM is a primary memory of the computer that stores the computer instructions and programs that do not need to be altered in future, like BIOS.
Nature	RAM is a volatile memory, which means it stores data as long as the computer system is turned on.	ROM is a non-volatile memory. Which means it stores data permanently even when the computer system is turned off.
Data access	The CPU of the computer can read, write, or alter the data on RAM.	The CPU can only read data from ROM, but it cannot write or change.
Types	There are two types of RAM: • SRAM (Static Random Access Memory). • DRAM (Dynamic Random Access Memory).	There are three types of ROM: • PROM (Programmable ROM) • EPROM (Erasable PROM) • EEPROM (Electrically EPROM).
Speed	The speed of RAM is quite high.	The speed of ROM is slower than RAM.
Cost	RAM is costly.	ROM is not so expensive.

Role and Functions of the Central Processing Unit (CPU)

The Central Processing Unit (CPU) interprets and executes instructions, performs tasks such as arithmetic operations, logic comparisons, and data movement. It is responsible for coordinating and managing the various components of the computer system, ensuring that instructions are carried out accurately and efficiently. The CPU has three main components, which are responsible for different functions: Arithmetic Logic Unit (ALU), Control Unit (CU), and Memory Unit (MU).



1. The Arithmetic Logic Unit (ALU)

The Arithmetic and Logic Unit (ALU) is a crucial component of the CPU responsible for executing mathematical computations and logical decisions.

It conducts basic arithmetic functions such as addition, subtraction, multiplication, and division, alongside logical comparisons that determine whether data items are larger, smaller, or equal. The ALU is essentially a foundational building block of the CPU, constituting a digital circuit designed specifically for carrying out arithmetic and logical operations.

2. The Control Unit (CU)

The Control Unit (CU), a vital part of the computer's central processing unit, arranges and manages the flow of data to and from the CPU. It oversees the activities of the ALU, memory registers, and input/output units, and ensures the execution of all the instructions stored in the program. This unit decodes the fetched instructions, interprets them, and dispatches control signals to input/output devices, facilitating proper execution of operations by the ALU and the memory registers.

The Control Unit serves as the director of the processor's activities, guiding the computer's memory, ALU, and input and output devices in responding to the processor's instructions.

3. Memory Unit (MU)

A temporary memory unit within the CPU is in the form of memory registers. They serve the purpose of directly storing data utilised by the processor. They come in various sizes, such as 16-bit, 32-bit, 64-bit, and so forth. Each register in the CPU is designated for specific functions like data storage, instruction storage, and memory location addressing. Assembly language programmers can utilise user registers to store operands, intermediate results, and other essential data.



Did You Know?

The Accumulator (ACC), a pivotal register within the ALU, contains one of the operands required for the operation to be executed within the ALU.

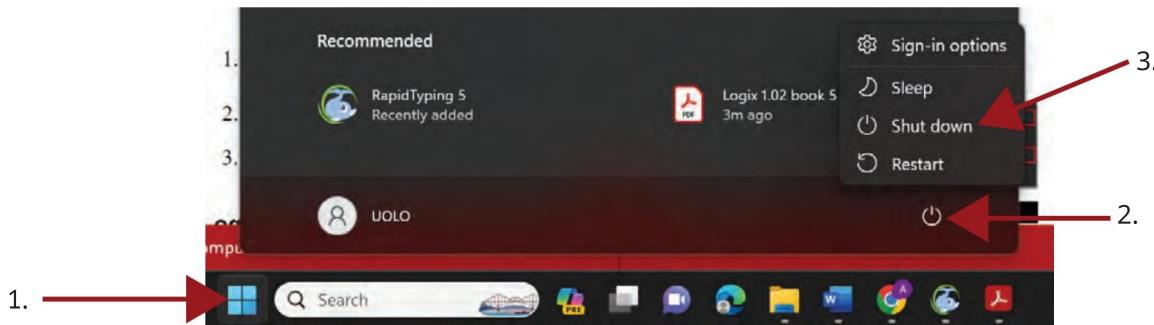
Procedure for Starting and Shutting Down a Computer

Starting Up

1. Connect the power cable and peripherals.
2. Press the **Power** button to start the computer.
3. Wait for the operating system to load.

Shutting Down

1. Save any open files and close running programs.
2. Click on the **Start** menu. Click on the **Power** button. Select **Shutdown** option.
3. Wait for the computer to shut down completely before turning off the power.



Activity Time

Activity 1: Understanding Computer Parts

(Group Work)

Organise students into small groups and provide them with either computer setups or visual aids showcasing computer parts.

Activity 2: Recognising Computer Parts

(Individual Work)

Instruct students to recognise and name different hardware components, including the CPU, monitor, keyboard, mouse, and storage devices.

Activity 3: Group Discussion

(Group Work)

Create groups of 4–5 students and discuss the specific roles and contributions of each hardware element to the overall functioning of a computer system.

Chapter Checkup

A Select the correct option.

- 1 What is the primary function of the Control Unit in a CPU?
 - a Execute mathematical computations
 - b Manage data flow to and from the CPU
 - c Store temporary data within the processor
 - d Display results of user-performed tasks

- 2 is a type of application software.

<ol style="list-style-type: none"> a Device driver b Operating system c Word processor 	<ol style="list-style-type: none"> d BIOS
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- 3 What is the role of the motherboard in a computer system?

<ol style="list-style-type: none"> a Coordinates and manages the CPU b Displays the results of user-performed tasks c Connects all essential components 	<ol style="list-style-type: none"> d Executes instructions and calculations
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B Fill in the blanks with the most suitable words.

- 1 The CPU consists of three main components, namely the , Control Unit, and Memory Unit.
- 2 is a type of secondary memory used for long-term data storage.
- 3 The is responsible for executing instructions and performing calculations in a computer system.
- 4 devices enable users to input data and interact with the computer system.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 The ALU performs arithmetic and logical operations within a CPU.
- 2 ROM is a volatile memory that loses data when the computer is powered off.
- 3 The motherboard houses the CPU, memory, and connectors for peripheral devices.
- 4 RAM is used for long-term data storage.

D Answer the following questions. (*Solved*)

Q1. What are the two main types of memory in a computer system and how do they differ in their functions?

A1. The two main types of memory are RAM (Random Access Memory) and ROM (Read-Only Memory). RAM is used for temporary data storage, allowing the CPU to access data quickly for current operations. It is volatile, which means it loses its data when the computer is powered off. On the other hand, ROM is used to store essential software and firmware that cannot be altered. It is non-volatile, retaining its data even when the power is off. Unlike RAM, the CPU can only read data from ROM but cannot modify it.

Q2. Explain the role of the Control Unit in a computer's CPU.

A2. The Control Unit is a vital part of the CPU that manages and coordinates the flow of data to and from the CPU. It oversees the activities of the Arithmetic Logic Unit (ALU), memory registers, and input/output units, ensuring the execution of all instructions stored in the program. It decodes the fetched instructions, interprets them, and dispatches control signals to input/output devices, facilitating the proper execution of operations by the ALU and memory. It serves as the director of the processor's activities, guiding the computer's memory, ALU, and input and output devices in responding to the processor's instructions.

Q3. Akshit wants to know about the hardware of a computer system and its different categories. Explain it to him.

A3. Hardware refers to the physical components of a computer system. These are tangible, physical devices that can be seen or touched. Computer hardware can be categorised into different types, including input devices, output devices, storage devices, and internal components.

- **Input Devices:** These devices enable users to input data and interact with the computer system. Examples of input devices include the keyboard, mouse, and scanner.
- **Output Devices:** These devices display the results of user-performed tasks. Examples of output devices are monitors, printers, and speakers.
- **Storage Devices:** These devices are used to store data and are often referred to as secondary storage. Examples of storage devices include CDs, DVDs, and hard disks.
- **Internal Components:** These critical hardware components are integral parts of the computer system. Examples of internal components include the CPU and motherboard.

Answer Key

A 1. b 2. c 3. c

B 1. Arithmetic Logic Unit (ALU) 2. Hard Disk Drive (HDD) 3. Central Processing Unit (CPU) 4. Input

C 1. True.

2. False. RAM is a volatile memory that loses data when the computer is powered off.

3. True.

4. False. ROM is used for long-term data storage.

9

Peripheral Devices

In this chapter, we will dive into the complex world of computer hardware, where we explore the various components and peripherals that make up a computer system. Understanding these elements is crucial, as they form the backbone of computing technology, enabling us to perform an array of tasks from simple calculations to complex simulations.

Have you ever thought about how your computer detects key presses and mouse movements? Or how your printer turns digital files into printed pages? This all is possible with the help of the special devices that connect to your computer, known as peripherals.

Peripheral Devices

Peripheral devices are the tools that expand the capabilities of computing systems. They serve as connectors between the digital and physical worlds, facilitating interaction, communication, and the exchange of information.

A peripheral device, whether inside or outside the computer, is a tool that links directly to a computer or digital device but isn't directly involved in its main function, like processing data. It helps users access and utilise the computer's features. While the computer can work without these devices, some, like the mouse, keyboard, or monitor, are crucial for user-computer interaction. These devices are also known as input-output (I/O) devices.

Importance of Peripheral Devices

Peripheral devices significantly contribute to improving our overall interaction with computing systems and unlocking the full capabilities of our devices. Let's explore why these tools are not merely add-ons but rather integral parts of our technological resources.

- Enhanced Functionality:** They expand the capabilities of computers and other digital devices, allowing users to perform a wider range of tasks, from simple operations to complex activities.
- User Interaction:** Peripherals such as a keyboard, mouse, and touchscreen enable users to interact with and control the digital system efficiently, making the user experience more intuitive and effective.
- Data Input and Output:** Devices like printers and scanners enable the conversion of digital data into physical formats and physical formats into digital data, respectively, making it easier to share and store information in various forms.
- Connectivity:** Peripherals such as modems, routers, and network adapters facilitate communication and data transfer between devices, enabling access to the internet and other networks.

- Efficiency and Productivity:** With the help of peripherals like external storage devices, users can store and retrieve data quickly, enhancing overall efficiency and productivity in various tasks.
- Specialised Tasks:** Certain peripherals are designed for specialised functions, such as graphic tablets for digital art, microphones for audio recording, and webcams for video conferencing, catering to specific user needs and preferences.

Types of Peripheral Devices

Let's study the various categories of peripheral devices and explore the wide range of functionalities that they offer.

Input Devices

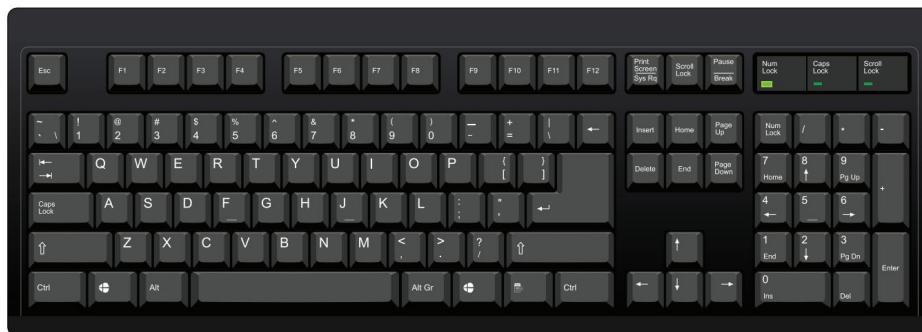
Input devices are electronic devices that receive instructions from the external environment and convert that data into a format that the computer can read and interpret. They act as a crucial link between the outside world and the computer, facilitating effective communication. When users input data using these devices, the information can be stored in the computer's memory for later processing and manipulation. An input device transmits data to a computer, enabling users to interact with and manage it.

Types of Input Devices

The following are the various types of input devices:

Keyboard

The keyboard is the primary input device for feeding data into a computer. It comprises different keys for typing letters, numbers, and symbols. A keyboard closely resembles a typical typewriter. It also includes some keys for performing specific functions. Keyboards come in various varieties. The standard keyboard has 104 keys. It connects to a computer system using either a USB cable or a Bluetooth connection.



Characteristics of the Keyboard:

- The keyboard has different keys to perform different functions.
- It allows the use of arrow keys as an alternative to the mouse.
- The main keys of a keyboard are the alphabet keys, special character keys, cursor keys, numeric keypad, and function keys.

Mouse

The mouse is the primary pointing device. Clicking and dragging the mouse enables the movement of the mouse pointer across the computer screen. The left mouse button facilitates item selection or relocation, while the right mouse button displays supplementary menus upon clicking. Some of the mouse types are trackball mouse, mechanical mouse, optical mouse, wireless mouse, etc.



Characteristics of the Mouse:

1. The mouse controls the movement of the cursor on the screen, enabling users to navigate in the desired direction.
2. It permits users to select files, folders, or multiple items or texts.
3. Users can hover the mouse pointer over any object.
4. The mouse can open files, folders, etc. This involves positioning the pointer over the file or folder and subsequently double-clicking to open or execute it.

Joystick

A joystick is a device used to navigate the cursor or pointer on a screen. It consists of a spherical ball attached to both ends of the stick, with the lower ball housed in a socket. The joystick allows for movement in all directions. They offer greater precision and durability compared to a mouse.



Characteristics of the Joystick:

1. It is used to control the position of the cursor or pointer on a screen.
2. It is commonly used for playing video games.
3. It has special push buttons that are pressed to provide input to the computer.

Light Pen

A light pen is a device resembling a pen that is used for pointing. It enables drawing on the monitor screen or selecting menu items. It contains a photocell and an optical system within a small tube. The photocell sensor component identifies the screen's position and transmits a signal to the CPU when the light pen's tip is moved across the monitor screen while the pen button is pressed.



Characteristics of the Light Pen:

1. The light pen is useful for drawing graphics.
2. It is used to select objects on the display screen.

Scanner

The scanner captures images, text, or other physical content from a physical source and converts them into a digital format that can be stored and manipulated on the computer. There are different types of scanners, like flatbed scanners, handheld scanners, sheetfed scanners, drum scanners, etc. Most scanners today are variations of the desktop (or flatbed) scanner. A flatbed scanner functions in a manner somewhat similar to a photocopier, with the key distinction being that a photocopier produces a physical paper copy, whereas a scanner creates a digital image that is stored on a computer.



Characteristics of the Scanner:

1. Scanners can handle low-quality or non-standard-weight paper.
2. They are versatile, enabling the scanning of various items regardless of their size. Whether small items or large documents, they can be scanned if appropriately positioned.

Webcam

A webcam is a video camera that captures and streams video in real time over the internet or a computer network. Webcams are commonly used for video conferencing, live streaming, online video chat, and video surveillance. They are often built into laptops, tablets, and smartphones, while external webcams can be connected to computers via USB or other interfaces.



Characteristics of a Webcam:

1. **Image Quality:** Webcams vary in image resolution and quality, typically measured in terms of pixels, with higher resolutions providing clearer and more detailed images.
2. **Frame Rate:** The frame rate represents the number of frames the webcam can capture per second, with higher frame rates leading to smoother and more fluid video.
3. **Connectivity:** Webcams can connect to computers through various interfaces, such as USB, Wi-Fi, or Bluetooth.
4. **Additional Features:** Some webcams come with built-in microphones, autofocus, low-light correction, and pan-tilt-zoom (PTZ) capabilities (this allows the camera to move horizontally, vertically, and zoom in and out), allowing for enhanced video and audio performance.
5. **Compatibility:** Webcams can be compatible with various operating systems and video conferencing software, although some may have specific compatibility requirements.

Barcode Reader

A barcode reader is a device that interprets information represented by light and dark lines, known as a barcode. A barcode is frequently used for price and product identification, labelling objects, numbering books, etc. The barcode reader is used to scan and extract data from barcodes. By shining light beams on the lines of the barcode, the reader identifies the encoded data within the barcode.



Characteristics of the Barcode Reader:

1. You can scan the barcode by simply positioning the barcode reader near the code and scanning it.
2. Visual indicators provide users with confirmation that the card has been swiped accurately.
3. Upon inserting a card, automated barcode scanners initiate scanning immediately.

Output Devices

An output device is any hardware component that receives information from a computer and then presents it in various forms, such as audio, visual displays, or printed copies. These devices are responsible for translating computer data into a format that can be easily comprehended by humans. While input devices facilitate data entry into the computer, it is the output devices that showcase the results of computer operations to the user.

Types of Output Devices

Let's learn about the various output devices.

Monitor

The primary output device of a computer is a monitor, commonly referred to as a visual display unit (VDU), which exhibits processed data, including text, images, videos, and audio. It achieves this by arranging minuscule dots, known as pixels. The clarity of the display, also known as its resolution, depends upon the number of pixels present. Higher resolution means more pixels are packed into the display area, hence better quality.



There are two types of monitors:

- Cathode-Ray Tube (CRT):** This monitor relies on a cathode-ray tube, which generates a stream of electrons via electron guns. These electrons strike the inner surface of a phosphorescent screen, creating images. The CRT monitor comprises millions of phosphorescent dots in three primary colours: red, blue, and green. These dots illuminate upon impact, resulting in image formation. Its key components include the electron gun, fluorescent screen, glass envelope, deflection plate assembly, and base.
- Flat Panel Monitor:** This type of display, in contrast to CRTs, is lighter, thinner, consumes less power, and has a higher resolution. It can be portable or mounted on walls, finding applications in devices such as calculators, video games, laptops, and graphical displays.



Did You Know?

Additionally, there is the plasma monitor, which is also a form of flat panel display. This technology utilises plasma cells positioned between two glass surfaces, containing noble gases and mercury solutions. When electricity is supplied, the gas transforms into plasma, generating UV light that produces an image.

Characteristics of the Monitor:

- Resolution Pixels:** Pixels are the smallest element of any image. The higher the number of pixels, the better the resolution of a monitor.
- Size:** The size of the monitor is the diagonal measurement of a desktop screen, which is typically 14 to 25 inches.
- Refresh Rate:** Total number of times per second that an image on a display is repainted or refreshed. The higher the refresh rate the better the display of the monitor.
- Luminance:** It is the brightness of the screen.

Printer

Printers are the output devices that produce a physical copy of a digital document or image. Printers are one of the most popular computer peripherals to print text and photos.

They are broadly classified into two categories:

- Impact Printers:** These types of printers employ a print head or hammer to transfer data onto the paper. The print head or hammer strikes an ink ribbon against the paper, resulting in the printing of characters. Some of the types of impact printers are:
 - Dot matrix printer
 - Daisy wheel printer
 - Line printer
 - Chain printer



2. Non-impact Printers: Non-impact printers are distinct in that they do not require a ribbon to print characters. These printers are frequently referred to as page printers due to their ability to print an entire page at once. Some of the types of non-impact printers are:

- Laser printers
- Inkjet printers

Characteristics of the Printer:

1. **Print Quality:** Printers vary in their ability to produce high-resolution text and images.
2. **Printing Speed:** The speed at which a printer can produce printed output varies, with some printers capable of high-speed printing for large volumes. The speed of a printer is measured in **pages per minute (ppm)**.
3. **Connectivity and Compatibility:** Printers may offer various connectivity options, such as USB, Wi-Fi, or Bluetooth, and compatibility with different operating systems and devices.

Plotter

A plotter is an advanced device used for producing high-resolution graphics in various colour formats. While similar to a printer in some aspects, it offers more sophisticated capabilities. Its primary applications include printing large-scale maps, architectural designs, and oversized graphics. Additionally, it is employed for creating images, 3D renderings, advertising materials, and detailed schematics of internal machine structures.



Characteristics of the Plotter:

1. Large-size prints can be taken via plotters.
2. It is slow and expensive.

Projector

A projector is a device that enables individuals to display their computer or device output on a wall or screen. Through the use of light and lenses, it enlarges and projects text, images, and videos. Consequently, it serves as a valuable output device for delivering presentations or projecting movies.



Characteristics of a Projector:

1. They are portable and can be effortlessly connected and used to project an image on a wall by a single individual.
2. Projectors represent a highly economical solution for creating a large video display within the home.
3. Projectors are compact and can be easily mounted on a back shelf, bookcase, or ceiling, as they occupy no floor space.

Speaker

Speakers are essential peripherals linked to computers for audio output. To facilitate their function, sound cards are necessary. Available in diverse configurations, from basic two-speaker setups to more elaborate surround-sound systems with multiple channels, speakers come in various sizes and designs. They receive audio input from the computer's sound card and translate it into audible sound waves.



Characteristics of Speaker:

1. Speakers are available in a wide range of qualities and prices.
2. Nowadays most computer systems include speakers in the CPU cabinets.

Microphone

A microphone is an audio input device that lets you talk or record sounds on your computer. Using a microphone, often called a mic, you can chat with friends, record your voice, or even control your computer using voice commands.



Characteristics of a Microphone:

1. A microphone can capture sounds from the surroundings very clearly.
2. It is easy to use by simply plugging it into your computer.
3. The microphones can be used for a variety of tasks such as online meetings, chatting with friends, voice recording, and giving voice commands.
4. Microphones used with computers are available in small sizes, making them convenient for desktop or laptop use.



Did You Know?

Most laptops these days are equipped with microphones, by default. With desktop computers, you can use either a pair of microphones or a headset that is a combination of microphones and speakers.

Storage Devices

Storage devices are integral components in which a computer retains all its data, including files, programs, operating system, etc. These devices are like virtual shelves, enabling the systematic organisation and retrieval of digital assets. Without storage devices, the computer would be unable to retain files, programs, or even its fundamental instructions. Storage devices safeguard and facilitate access to your data whenever required.

Types of Storage Devices

Let us learn about some commonly used storage devices.

Hard Disk Drive (HDD)

A Hard Disk Drive (HDD) comprises a rotating disk (platter) coated with a magnetic substance and a read/write head that records and retrieves data on the disk's surface. The read/write head moves across the spinning disk to access different sections of the stored data. HDDs are commonly used to backup data.



Characteristics of a Hard Disk Drive (HDD):

1. **Ample storage capacity:** HDDs provide substantial storage space, with certain models capable of accommodating up to 16TB of data.
2. **Cost-effectiveness:** HDDs offer a budget-friendly solution for storing extensive volumes of data.
3. **Larger physical dimensions:** Although HDDs are often installed inside the CPU cabinets, nowadays external hard disks are also available. These can easily be carried from one place to another.
4. **Slower operational speed:** HDDs exhibit slower data access and transfer speeds in comparison with primary memory.
5. **Mechanical components:** HDDs include mechanical elements that can deteriorate over time.

Solid State Drive (SSD)

Solid State Drives (SSDs) utilise flash memory for data storage rather than a spinning disk. SSDs have significantly faster speeds, enhanced durability, and reduced vulnerability to mechanical breakdowns compared to HDDs.



Characteristics of a Solid-state Drive (SSD):

1. **Faster performance:** SSDs deliver notably faster data access and transfer speeds in comparison to HDDs.
2. **Compact form:** With smaller and lighter physical dimensions, SSDs are well-suited for integration into portable devices like laptops and tablets.
3. **Lower power consumption:** SSDs consume less energy than HDDs, thereby promoting greater energy efficiency.
4. **Higher price point:** SSDs are more costly than HDDs.
5. **Absence of mechanical components:** SSDs lack moving parts, resulting in increased durability and decreased susceptibility to mechanical failure compared to HDDs.

Flash Drive

A flash drive, also known as a pen drive, is a portable storage device that utilises flash memory to store and transfer data. It is typically small in size and connects to a computer via a USB (Universal Serial Bus) port, allowing for easy data transfer between devices. Flash drives are commonly used for backing up data.



Characteristics of Flash Drives:

1. **Portability:** Flash drives are compact and lightweight, making them highly portable and convenient for on-the-go use.
2. **Plug-and-Play:** They can easily be connected to a computer's USB port without the need for additional software installation, enabling quick data access and transfer.
3. **High Compatibility:** Flash drives are compatible with various operating systems and devices, allowing for seamless data exchange between different platforms.
4. **Data Storage:** They offer varying storage capacities, ranging from a few gigabytes to several terabytes, providing ample space for storing and transferring different types of files.
5. **Reusability:** Flash drives can be erased and rewritten multiple times, allowing for the easy removal and updating of data as needed.

Communication Devices

Communication devices are instrumental in enabling the transmission of data and information between your computer and external networks, devices, or the internet. Their functionality empowers your computer to engage in data sharing, access resources, and establish connections with the global digital network. Whether it involves internet connectivity, video conferencing for collaborative purposes, or the smooth transfer of files, these devices are essential for enhancing the communication and interactive capabilities of your computer.

Types of Communication Devices

Let us learn about some commonly used communication devices.

Modem

A modem, short for modulator-demodulator, is a hardware device that allows a computer or other devices to connect to the internet. It modulates digital data into an analog signal that can be transmitted over telephone lines, cable lines, or fibre optics, and then demodulates the incoming analog signal back into digital data. There



are several types of modems, including dial-up modems, DSL modems, cable modems, and fibre modems, each of which has its own specifications and capabilities.

Characteristics of the Modem:

The following are the characteristics of a modem:

- Connection Type:** Modems can connect through various mediums, including telephone lines (dial-up), coaxial cables (cable modems), DSL lines (DSL modems), or fibre optics (fibre modems).
- Speed:** Modems have different data transmission speeds, typically measured in bits per second (bps) or megabits per second (Mbps).
- Functionality:** Some modems may also include additional features such as built-in Wi-Fi routers, multiple ethernet ports, or advanced security features.

Router

A router is a device that helps different types of computer networks to communicate with each other. A modem connects a computer to the internet, whereas a router connects two computer networks to each other as well as the internet. The main functionality of a router is to make sure that the information reaches its intended destination while keeping data safe along the way.

Characteristics of a Router:

- Directing Traffic:** Routers find the best way for information to travel from one computer to another on a network.
- Security Features:** Routers can implement security features such as firewalls to protect the computer networks from any unwanted traffic.
- Wi-Fi:** Some routers let you connect to the internet without using cables, which is called Wi-Fi (Wireless-Fidelity).
- Updates:** Routers can be updated to get new features or fix problems.

Activity Time

Activity 1: Group Discussion

(Group work)

Create groups of 4–5 students and ask them to discuss various input and output devices that they use in their daily tasks.

Activity 2: Research Work

(Individual work)

Visit your nearby stores, such as a grocery shop, medical store, and a restaurant. Identify and list the peripheral devices that are used at these places. Compare your list with your classmates' and discuss.

Activity 3: Create a Collage

(Individual work)

Collect the pictures of various peripheral devices from the old newspapers, books, or magazines. Create a collage by pasting these pictures on chart paper. Paste the collage in your classroom or computer lab.

Chapter Checkup

A Select the correct option.

- Which of the following is a type of printer that does not require a ribbon to print characters?
 - Dot matrix printer
 - Line printer
 - Laser printer
 - Daisy wheel printer

2 What is the primary function of a modem?

- a** To print documents
- c** To connect to the internet

- b** To project images
- d** To scan barcodes

3 Which of the following is a characteristic of a flash drive?

- a** Large size and heavyweight
- c** Slow data transfer rate

- b** Incompatibility with various operating systems
- d** Portability and plug-and-play functionality

B Fill in the blanks with the most suitable words.

- 1** is a device that enables individuals to display their computer or device output on a wall or screen.
- 2** devices receive information or instructions from the external environment and convert that data into a format that the computer can read and interpret.
- 3** devices are instrumental in enabling the transmission of data between your computer and external networks, devices, or the internet.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1** A light pen is used primarily for drawing graphics and selecting objects on the display screen.
- 2** Solid-state drives (SSDs) are generally more affordable than hard disk drives (HDDs).
- 3** The monitor is the primary output device of a computer, displaying processed data including text, images, and audio.

D Answer the following questions. (*Solved*)

Q1. What are the main differences between a solid-state drive (SSD) and a hard disk drive (HDD)?

A1. The main differences between a solid-state drive (SSD) and a hard disk drive (HDD) are:

- **Memory:** SSDs use flash memory, while HDDs have spinning disks.
- **Speed:** SSDs are faster.
- **Durability:** SSDs have no moving parts, making them more durable.
- **Power consumption:** SSDs consume less power.
- **Cost:** SSDs are generally more expensive than HDDs.

Q2. How do input devices facilitate effective communication between the external environment and the computer? Provide examples of commonly used input devices.

A2. Input devices facilitate effective communication by receiving information or instructions from the external environment and converting that data into a format that the computer can read and interpret. Examples of commonly used input devices include the keyboard, mouse, scanner, and barcode reader.

Q3. In Samita's class, the teacher is using the projector to display a presentation on peripheral devices. Explain some characteristics of projectors.

A3. The following are the characteristics of projectors:

- They are portable and can be effortlessly connected and used to project an image on a wall by a single individual.
- Projectors represent a highly economical solution for creating a large video display within the home.
- Projectors are compact and can be easily mounted on a back shelf, bookcase, or ceiling, as they occupy no floor space.

Answer Key

A 1. c 2. c 3. d

B 1. Projector 2. Input 3. Communication

C 1. True.

2. False. SSDs are generally more expensive than HDDs.

3. True.

10

Basic Computer Skills

You have learnt about various peripheral devices in the previous chapters that are used for providing input to the computer, store data, and give output. Let us now learn about some basic computer skills that are required to perform operations on the computer in this chapter.

Primary Operations

Computer systems perform several primary operations, which include input, output, storage, processing, and control. Input involves providing data to the system; processing involves performing calculations on the data; output involves providing data to the user; and storage involves saving data. Together, these operations enable the system to function properly and perform various tasks. Let us learn about these one by one.



Input Operations

The process of supplying data to a computer system for processing is known as input operation. This can be done through various devices, such as a keyboard, mouse, microphone, web camera, etc. The data is then translated into a format that the computer can understand and process. Input is crucial to the functioning of a computer system, as it allows the users to interact with the system and provide it with the necessary information to perform various tasks.



Keyboard



Mouse



Joystick



Scanner



Web Camera



Microphone

Input Devices of Computers

There are several types of input devices in a computer system. The most common ones are:

Keyboard Typing on the keyboard provides information to the computer. Keyboards come in a variety of sizes and layouts, including standard QWERTY keyboards and ergonomic keyboards designed to reduce hand and wrist strain.

Mouse A mouse is used to point and click on the screen. It comes in a variety of shapes and sizes, including wired and wireless models, and can be customised with additional buttons and features.

Scanner It is a device that scans an image (such as photographs, printed text, or handwriting) or an object (such as an ornament) and converts it to a digital image. Most scanners today are variations of the desktop (or flatbed) scanner. The flatbed scanner is commonly used in offices. A flatbed scanner functions in a manner somewhat similar to a photostat machine, with the key distinction being that a photocopier produces a physical paper copy, whereas a scanner creates a digital image that is stored on a computer.

Microphone A microphone, sometimes referred to as a mike or mic, is a device that converts sound into an electrical signal. They are used in many applications, such as telephones, hearing aids, recording studios, etc. All microphones capture sound waves with a thin, flexible diaphragm. The vibrations of this element are then converted by various methods into an electrical signal, which is an analog of the original sound.

Web Camera It is used to capture visual information and feed it into the computer. This information can be processed and used by the computer in a variety of ways, commonly in video conferencing.

Joystick A joystick is a pointing device used commonly for playing games. It includes a little handle that you can move in different directions. When you push or pull it, your game character does the same. Some joysticks also have buttons that you can press to make your character jump or do some other action.



Did You Know?

The touchscreen is both an input and output device. It is used on devices like smartphones and tablets where users interact with the screen directly. Users can swipe, tap, and pinch to zoom, providing input to the computer naturally and intuitively. The display can show visual outputs too.

Processing Operations

Processing operations are essential for the functioning of a computer system and involve manipulating data and instructions by the CPU. These operations include arithmetic, logical, input/output, control, and data movement operations. They control the flow of data and instructions, transfer data between the computer's memory and external devices, and perform basic mathematical functions. The speed and efficiency of processing operations depend on factors such as the CPU's clock speed, cache size, and number of processing units.

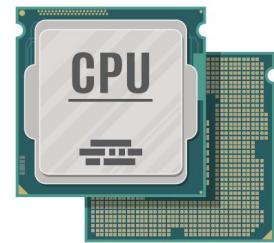
Processing Devices of a Computer

There are several types of processing devices in a computer system. The most common ones are:

Central Processing Unit (CPU) The CPU is the brain of the computer, responsible for executing instructions and managing the system's resources.

Graphics Processing Unit (GPU) The GPU is a specialised processor designed to handle complex calculations related to graphics and video processing.

Digital Signal Processor (DSP) A DSP is a microprocessor optimised for processing digital signals, such as audio and video.



Central Processing Unit
(CPU)/Processor

Application-specific Integrated Circuit (ASIC) An ASIC is a specialised chip designed for a specific application or task, such as encryption or data compression.

Field-programmable Gate Array (FPGA) An FPGA is a programmable chip that can be configured to perform a wide range of functions, making it useful for applications that require flexibility and adaptability.

Output Operations

The process of displaying or producing information in a computer system is known as output operations. The computer produces output in various formats, such as text, graphics, sound, and video. Output is just as important as input because it allows users to see and perceive the information that the computer has processed.

Output Devices of a Computer

There are several types of output devices in a computer system. The most common ones are:

Printers They are used to present text, images, and other information in a physical form, making it easier to read and share.

Printing can be performed using a variety of printing technologies, including inkjet, laser, and dot matrix printers.

Monitors They are used to display text, images, and videos to the user. They are available in a wide range of sizes and resolutions, from small handheld devices to large wall-mounted displays.

Speakers Speakers serve the purpose of delivering sound to the user, including music, sound effects, and voice recordings. Audio can be played through built-in speakers on a computer or through external speakers or headphones.

Projectors They are used to project visual information onto a larger screen or surface. They are commonly used in presentations, movie theatres, and events and come in various types, including LCD projectors and DLP projectors.

Headphones They serve the purpose of delivering sound directly to the user's ears. They are commonly used for listening to music, watching videos, and playing games. They come in various types, including earbuds, over-ear headphones, and noise-cancelling headphones.

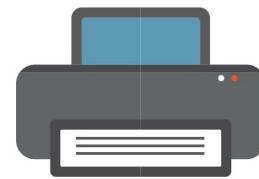
Plotter A plotter is a vector graphics printing device that connects to a computer. Plotters print their output by moving a pen across the surface of a piece of paper. This means that plotters are restricted to line art rather than raster graphics, as with other printers. Because of the mechanical movement of the pens, they can draw complex line art, including text, although they do it slowly.

Storage Operations

Storage operations are crucial for saving and retrieving data. They involve reading and writing data to and from these storage devices. This is done through input/output operations, which involve transferring data between the storage device and the computer's memory or processor. There are two main types of storage devices: primary storage and secondary storage.



Monitor



Printer



Speaker



Headphones



Projector

Primary Storage

It is temporarily used to hold data that is currently being processed by the computer. It includes:

Random Access Memory (RAM) The RAM chip provides volatile storage, where programs and data are temporarily saved during processing and permanently deleted when the computer is turned off. RAM allows the CPU to quickly read and write data, which significantly speeds up the computer's performance.

Read-only Memory (ROM) The ROM chip retains the stored programs and data even when the computer turns off. So, unlike RAM chips, ROM chips are non-volatile. ROM contains data that is read-only, meaning it can be read but cannot be easily modified by the user. The ROM chip contains microprogrammed control instructions that instruct the machine to perform certain operations. For example, the BIOS (Basic Input/Output System) in a computer is typically stored in the ROM, ensuring that the computer can boot up and initialise its hardware components.

Cache Memory It is a high-speed memory. It can be inserted either on a motherboard or as a part of the CPU. It stores information and various instructions that are used repeatedly to execute the programs.

It improves the overall performance of the computer system in terms of the execution of commands. Cache is more expensive than RAM, but the user can also buy a CPU with in-built cache memory. The CPU first examines the cache when it wants certain data.

Secondary Storage

It is used for the long-term storage of data. It includes devices such as hard disk drives, solid-state drives, CDs, pen drives, memory cards, etc. These devices are used to store files and programs that are not currently being used by the computer.

Storage Devices of Computers

There are several types of storage devices in a computer system. The most common ones are:

Hard Disk Drive (HDD) HDDs are known for their large capacity, making them ideal for storing large files and programs. Hard disks are made up of one or more magnetic disks called platters. These platters store data and spin rapidly while a read/write head moves across them to access or modify data.



Hard Disk Drive

Solid-state Drives (SSDs) They are a newer type of storage device that uses flash memory to store data. SSDs are faster and more reliable than HDDs, making them a popular choice for gamers, video editors, and other users who require high-speed access to their data.



Solid-state Drive

Flash Drives They are also known as pen drives. They are small, portable storage devices that can be easily connected to a computer's USB port. They are ideal for transferring files between computers or for storing important data that can be easily carried around.



Flash Drive

Memory Cards They are small, removable storage devices that are commonly used in cameras and other portable devices. They are available in a range of sizes and capacities, making them a flexible storage option for users who need to store and transfer data on the go.



Memory Card

External Hard Drives They are larger storage devices that connect to a computer via USB or another interface. They are ideal for users who need to store large amounts of data or who require a backup solution for their important files and programs.



External Hard Drive

Communication Networking of Computer Systems

Communication networking in computer systems refers to the exchange of data and information between two or more computers or devices. Communication networking allows computers and devices to share resources, communicate with each other, and work together regardless of their physical location.



Here are some common types of computer networks used in communication networking:

Local Area Network (LAN) A LAN is a network that connects computers and devices within a limited geographical area, such as an office, building, or campus.

Metropolitan Area Network (MAN) A MAN typically spans a city or a large campus, connecting multiple LANs within that specific geographic area.

Wide Area Network (WAN) A WAN is a network that connects computers and devices over a large geographical area, country, continent, or even the world, using technologies such as the internet.

Wireless Network A wireless network uses wireless communication technologies, such as Wi-Fi, to connect computers and devices to the network.

Bluetooth Network A Bluetooth network allows devices to communicate wirelessly over short distances, typically within a range of 30 feet.

Virtual Private Network (VPN) A VPN is a network that allows users to connect to a private network over the internet. VPNs are commonly used for secure remote access to corporate networks.

Activity Time

Activity 1: Group Discussion

(Group Work)

Make a group of 3 or 4 students and ask them to discuss input and output operations in class.

Activity 2: Creating a Chart

(Individual Work)

Tell every student to make a chart of their favourite operation of a computer system.

Activity 3: Research Work

(Individual Work)

Ask the students to conduct a research in their neighbourhood and find out about the various types of computer networks that these places use to communicate with each other.

Chapter Checkup

A Select the correct option.

- 1 Which of the following is NOT a primary operation of a computer?
 a Input b Processing
 c Storage d Printing
- 2 Which of the following is an example of an input device?
 a Monitor b Printer
 c Keyboard d Speaker
- 3 Which of the following refers to the saving and retrieval of data on a computer?
 a Input b Output
 c Storage d Control

B Fill in the blanks with the most suitable words.

- 1 The primary operations of a computer include input, processing, storage, and
- 2 A joystick is an example of an device.
- 3 is a type of storage device that uses flash memory to store data.
- 4 A is a network that connects computers and devices around the globe.

C State whether the following is *True* or *False*. Correct the statements that are false.

- 1 Processing refers to the manipulation of data by a computer.
- 2 A computer network does not allow computers and devices to share resources.
- 3 Input is the process of entering data and commands into a computer.
- 4 A webcam is an example of an input device.

D Answer the following questions. (*Solved*)

Q1. What are storage operations in a computer system?

A1. Storage operations are crucial for saving and retrieving data. It involves reading and writing data to and from these storage devices.

Q2. What is communication networking?

A2. Communication networking in computer systems refers to the exchange of data and information between two or more computers or devices. Communication networking allows computers and devices to share resources, communicate with each other, and work together regardless of their physical location.

Q3. Riya wants to backup her files to protect her data from potential loss. Name one device that she can use for this purpose.

A3. External hard drive.

Answer Key

- A** 1. d 2. c 3. c

- B** 1. Output 2. Input 3. SSD 4. WAN

- C** 1. True.
2. False. A computer network allows computers and devices to share resources.
3. True.
4. True.

Unit Reflection

Key Terms

ICT: ICT stands for Information and Communication Technology. It is a broad term that includes a wide range of technologies and tools used for handling, processing, storing, and communicating information.

Peripheral devices: Peripheral devices are the tools that expand the capabilities of computing systems. They serve as connectors between the digital and physical worlds, facilitating interaction, communication, and the exchange of information.

Global Positioning System (GPS): GPS is a radio-based satellite navigation system that uses radio signals to precisely determine a specific position.

Solid State Drives (SSDs): SSDs are storage devices that utilise flash memory for data storage rather than a spinning disk. SSDs have significantly faster speeds, enhanced durability, and reduced vulnerability to mechanical breakdowns compared to hard-disk drives (HDDs).

Pixels: Pixels are the smallest element of any image.

Cache: It is a high-speed memory. It can be inserted either on a motherboard or as a part of the CPU. It stores various information and instructions that are used repeatedly to execute the programs.

The Arithmetic and Logic Unit (ALU): It is a crucial component of the CPU responsible for executing mathematical computations and logical decisions.

Motherboard: It is the primary circuit board that connects all the essential components of a computer system. It houses the CPU, memory, and connectors for peripheral devices such as the hard drive, CD/DVD drive, and graphics card.

Things to Remember

- ICT has deeply impacted our personal lives. It has made convenience, efficiency, connectivity, and accessibility of information and resources at every doorstep possible.
- Key components of ICT are computers, software, the internet, telecommunications, networking, data storage, information security, and multimedia.
- ICT tools like smartphones, tablets, radio, televisions, laptops, and computers are part and parcel of modern society.
- The clarity of the display, also known as resolution, depends upon the number of pixels present. Higher resolution means more pixels are packed into the display area.
- Hardware refers to the physical components of a computer system. These are physical devices that can be seen or touched.
- A barcode reader is a tool that interprets information represented by light and dark lines in barcoded data. Barcoded data is frequently used for price and product identification, labelling objects, numbering books, etc.
- Software is a set of instructions or programs given to the computer to complete a task. It is a part of a computer that cannot be touched or felt.

- The Central Processing Unit (CPU) interprets and executes instructions and performs tasks such as arithmetic operations, logic comparisons, and data movement.
- The Control Unit, a vital part of the computer's central processing unit, arranges and manages the flow of data to and from the CPU.
- Tablets are portable computing devices that are bigger than smartphones but smaller than laptops.
- An e-newspaper, or electronic newspaper, is a digital version of a traditional print newspaper that is accessible through electronic devices such as computers, tablets, smartphones, and e-readers.
- Registers, a type of temporary memory unit within the CPU, serve the purpose of directly storing data utilised by the processor.
- Peripheral devices are the tools that expand the capabilities of computing systems. They serve as connectors between the digital and physical worlds, facilitating interaction, communication, and the exchange of information.
- Input devices are electronic devices that receive instructions from the external environment and convert that data into a format that the computer can read and interpret.
- An output device is any hardware component that receives information from a computer and then presents it in various forms, such as audio, visual displays, or printed copies.
- Storage devices are integral components in which a computer retains all its data, including files, programs, operating system, etc.
- Communication devices are instrumental in enabling the transmission of data and information between your computer and external networks, devices, or the internet.
- The process of supplying data to a computer system for processing is known as input operation. This can be done through various devices, such as a keyboard, mouse, microphone, web camera, etc.
- Processing operations are essential for the functioning of a computer system and involve manipulating data and instructions by the CPU.
- Storage operations are crucial for saving and retrieving data. They involve reading and writing data to and from these storage devices.
- Communication networking in computer systems refers to the exchange of data and information between two or more computers or devices.

Test Your Knowledge

A. Select the correct option.

1. Smartphones have for maps.
a. GPS b. PGS
c. SGP d. GSP
2. requires an internet connection and allows users to attach files in the form of images, audio, video, or documents.
a. E-readers b. E-newspaper
c. Radio d. Email
3. What type of device is a CRT?
a. Output b. Input
c. Storage d. Processing
4. is a device that scans an image (such as photographs, printed texts, or handwritings) or an object (such as an ornament) and converts it to a digital image.
a. Barcode reader b. Scanner
c. Printer d. Microphone
5. is the primary memory of the computer that stores data and instructions on which the CPU is currently working.
a. RAM b. ROM
c. Cache memory d. None of these

B. Fill in the blanks with the most suitable words.

1. is called the brightness of the screen.
2. ICT stands for
3. A is a device that enables individuals to display their computer or device output on a wall or screen.
4. A is a device that converts sound into an electrical signal.
5. software includes word processors, spreadsheets, and a variety of other task-specific programs.

C. State whether the following is *True* or *False*. Correct the statements that are false.

1. Google Drive provides a cloud storage service.
2. A light pen enables drawing on the monitor screen or selecting menu items.
3. The motherboard is the primary circuit board that connects all the essential components of a computer system.
4. The CU is known as the brain of the computer.
5. LANs connect computers across larger geographical areas.

D. Short answer-type questions.

1. What is the use of ICT in banking and finance?
2. What are SD cards?
3. Name the three types of ROM.

E. Long answer-type questions.

1. What is a modem? What are its various types?
2. What is the role of ICT in personal life?
3. Differentiate between system software and application software.

F. Competency-based questions.

1. Rani got a new computer. But she does not know how to start it. Help her by telling her the procedure to start her computer.
2. It was Maira's first day at school. During a lecture in the computer lab, she noticed that her teacher was using a device resembling a pen to draw on the monitor screen. Name the device.