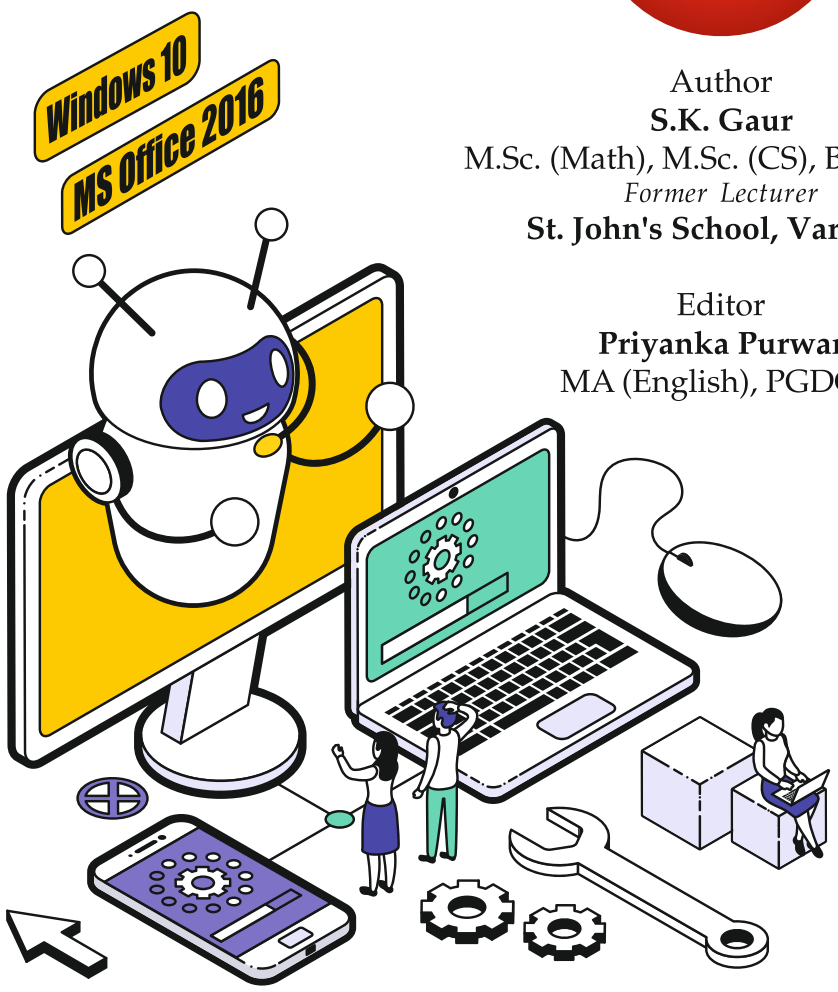
Tech World

Computer Science Textbook

Based on
Windows 10 &
MS Office 2016

2



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Preface

In today's School Curriculum, computer technology has become an essential part of early learning. By incorporating computer education, students can enhance their intrinsic skills in various subjects. Since computers are now used in almost all aspects of life, it is important to familiarise children with this useful tool. **Tech World** is a series of eight books for **Classes 1** to **8** that is based on **Windows 10** and **Office 2016**. The series covers a wide range of topics including the role of computers, MS Paint, file management, MS Word, MS Excel, MS PowerPoint, MS Access, Operating systems, the evolution of computers, types of software, HTML, number systems, program coding, networking, internet services, App development, cloud computing, and safeguarding computers from viruses.

The combination of Windows 10 and Microsoft Office 2016 is highly popular, and our series follows suit. Our series is designed with adherence to **NEP** and **NCF** and focuses on **Coding** (**Scratch**, **HTML**) and **Artificial Intelligence** as its key concepts.

With a learner-friendly approach, our series aims to make technology accessible to all and keep up with daily advancements.

Our series encourages children to explore technology and comprehend the science behind the digital world. The teaching and learning process is made enjoyable with the use of comic strips, cartoon characters, and illustrations.

Tech World is a student-focused program that aims to promote technology-based learning and skill-building for tasks both inside and outside of school. The program includes several key features, such as:

- **Key Points:** A brief summary of the concepts taught in each chapter.
- **Brainy Fact:** Additional interesting information on the topic is being covered, including inventions of scientists and their contributions to enhancing the knowledge of the students.
- **Smart Path:** Important facts related to the concepts to enhance student learning.
- **Lab Time:** Activities to help students practice what they've learned in theory.
- **Activity:** Hands-on, do-it-yourself creative works for holistic learning.
- **Life Skills:** Important ideas and suggestions related to the topic that students should follow in their daily lives.
- **Word Glossary:** Easy-to-understand explanations of difficult technical terms.
- **Let's Go Over:** Recapitulation points providing a summary of the chapter.
- **Worksheets:** Evaluation tools to thoroughly test student knowledge.
- **Projects:** Creative activities based on the concepts learned in class.
- **National Cyber Olympiad:** Sample questions to prepare students for a national annual competition, one of the largest Olympiads.

We welcome constructive feedback to improve future editions of the program.

—Publisher

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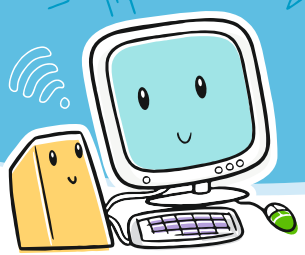
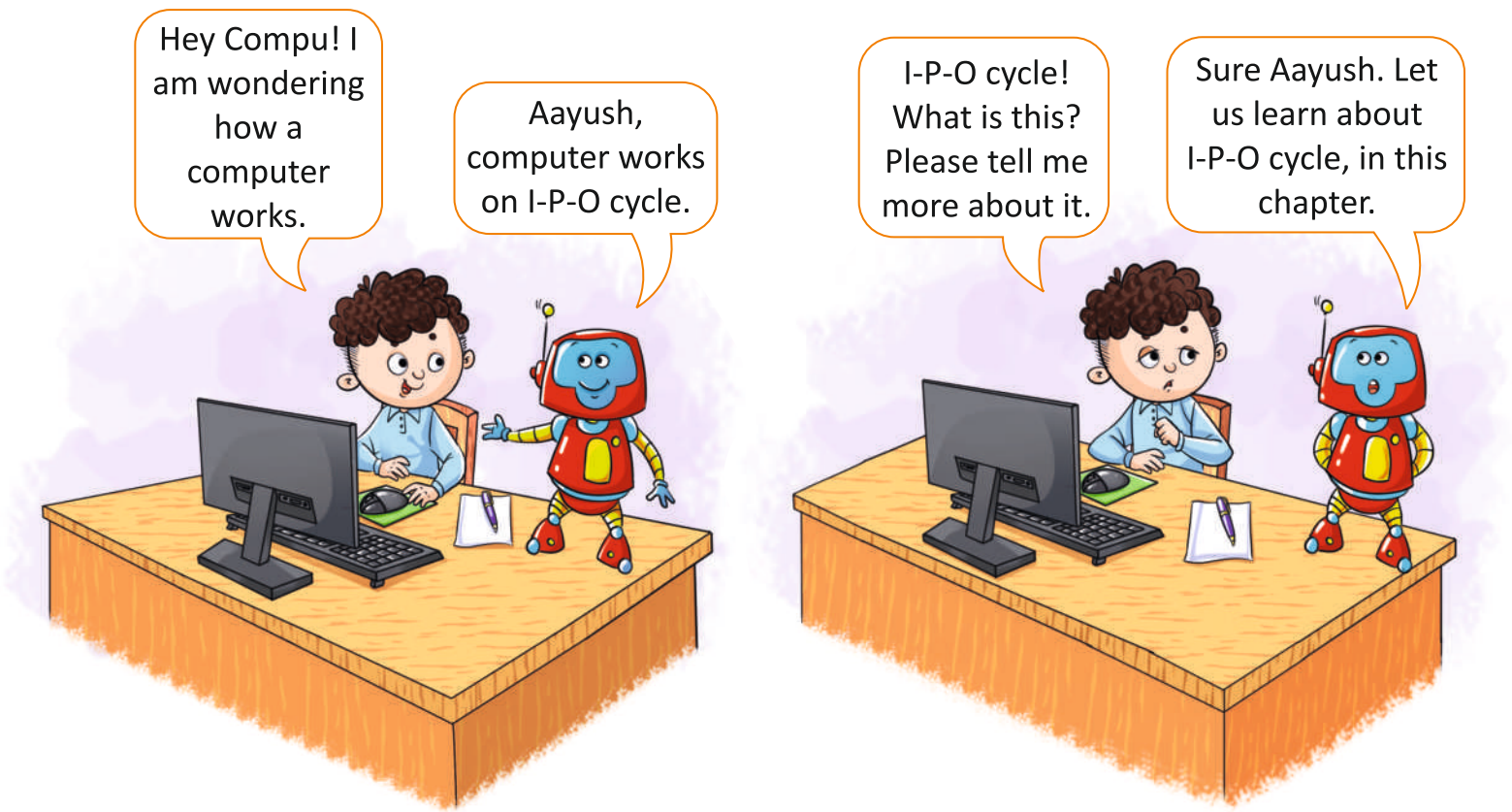


1

Computer – An Electronic Device

KEY POINTS

- Functions of a Computer
- Computer vs Man
- Disadvantages of a Computer
- Working of a Computer
- Advantages of a Computer



As you already know, a computer is a man-made machine. Every man-made machine needs some kind of energy to work, be it fuel, electricity, or human power. A computer requires electricity to work. It is an electronic device.



Fig. 1.1 – Computer

FUNCTIONS OF A COMPUTER

A computer can do several things at one time.

1

We can write a story or letter on a computer.



Fig. 1.2 – Writing a Story



Fig. 1.3 – Listening to Music

2

We can listen to music using a computer.

3 We can watch cartoon shows and movies on a computer.



Fig. 1.4 – Watching Movies



Fig. 1.5 – Playing Games

4 We can play games using a computer.

5 We can draw pictures using a computer.



Fig. 1.6 – Drawings Pictures



Fig. 1.7 – Solving Sums

6 We can solve mathematical problems on a computer.

WORKING OF A COMPUTER

A computer first takes input, then processes it, and then gives the output. Let us learn it.

Input: The data and instructions that we enter into a computer are called input. We provide input data using the keyboard and mouse.

Process: Working on the input data and instructions is called processing. The processing part is done using the CPU.

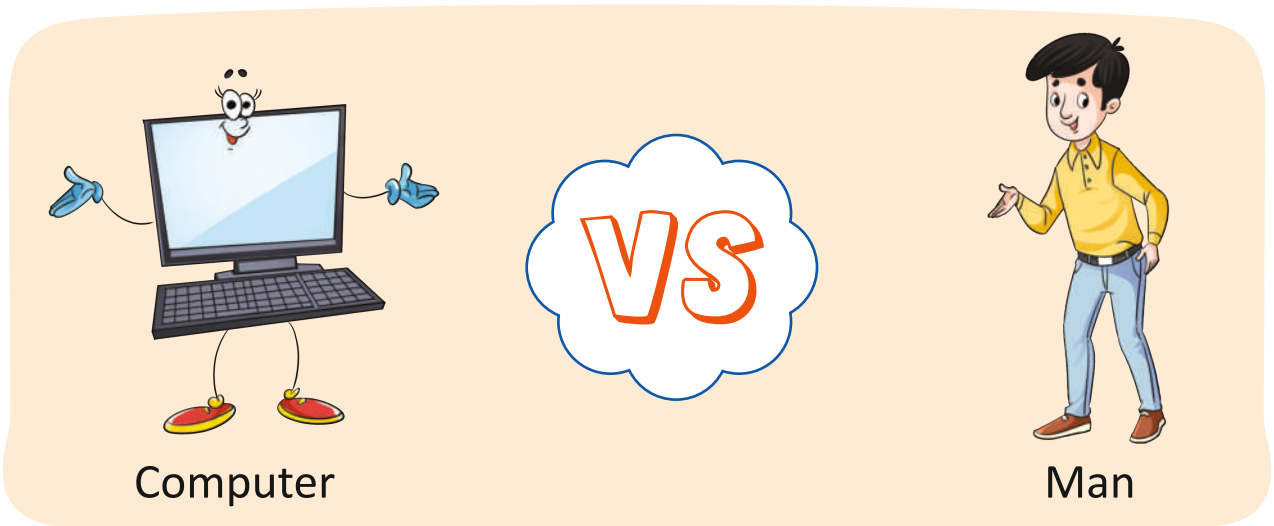
Output: The final result is called the output. It is shown by the computer on the monitor.

This whole process is called the **Input-Process-Output** (I-P-O) cycle.



Fig. 1.8 – I-P-O Cycle of computer

COMPUTER VS MAN





A computer is an electronic machine.

A man is not a machine.





A computer can work very fast.

A man cannot work faster than a computer.





A computer can do several things at a time. For example, at one time, it can play songs, perform calculations, and type letters.

A man can do only one work at a time. For example, when you are writing a letter you cannot perform calculations as well.





A computer has a strong memory. For example, all the things that you store on a computer are saved till you delete them.

A man's memory is not as strong. He may forget certain things.





A computer cannot think on its own.

A man can think on his own. He can take his own decisions.





- It helps us to organise data.
- It improves communication and provides access to huge amounts of information.
- It makes our work easy by allowing us to automate things.
- It saves paper and thus saves the environment.

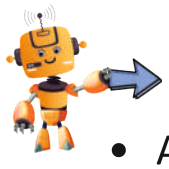
DISADVANTAGES OF A COMPUTER



- A virus can attack a computer and can steal or leak the information stored in it.
- A computer cannot take decisions on its own. It cannot think.
- It cannot work on its own. It requires our instructions.
- It consumes a lot of electricity, which is not good for our environment.
- If we work on the computer for a long time, we can face serious health problems.
- If it stops working, we can lose all our information.

Word Glossary

- **Computer** : A man-made machine used for several things.
- **Input** : The data and instructions that we enter into a computer are called input.
- **Process** : Working on the input data and instructions is called processing.



Let's Go Over

- A computer is an electronic device.
- A computer is used to do several things.



- We can write a letter or story, watch movies, play games, draw pictures, listen to music, and solve sums on a computer.
- A computer is different from a man in many ways.
- A computer works very fast.
- A computer can do multiple tasks at one time.
- A computer can save many things in its storage device.
- A computer cannot work on its own. It requires our instructions.
- A computer works on I-P-O cycle.



Brain Buzz

A. Tick (✓) the correct options.

1. Which of the following is not the use of a computer?

a. Playing games ◯ b. Watching movies ◯

c. Eating food ◯ d. Keeping record ◯

2. Which of the following is used to give input to the computer?

a. Keyboard ◯ b. CPU ◯

c. Mouse ◯ d. Both a. and c. ◯

3. Where does the processing take place in a computer?

a. In CPU ◯ b. In monitor ◯

c. In mouse ◯ d. All of these ◯

4. Which of the following is not an advantage of a computer?

a. It saves time. ◯

b. It makes our work fast. ◯

c. It needs instructions from humans. ◯

d. It cannot think of its own. ◯

B. Fill in the blanks.

1. Computer is a/an _____ machine.
2. A computer requires _____ to work.
3. A computer works _____ than man.
4. A computer has a _____ memory.
5. A _____ can attack a computer and steal information.

C. Write T for true or F for false statements.

1. We can play games using a computer. _____
2. A man requires electricity to survive. _____
3. A man cannot take his own decision. _____
4. A computer can do any task even without electric power. _____
5. A computer never gets tired. _____

D. Search and circle the following words in the given grid:

COMPUTER DRAW MOVIES WRITE MUSIC

S	W	V	C	G	Q	J	G
F	Y	M	O	V	I	E	S
D	J	Y	M	U	S	I	C
R	U	L	P	I	S	F	F
A	F	O	U	U	I	R	C
W	R	I	T	E	T	J	L
H	Y	P	E	T	G	H	K
O	Y	L	R	S	Q	Y	P

E. Answer the following in one word.

1. Can a man work faster than a computer? _____
2. Who can attack on a computer and steal its information? _____

3. What does a computer need to work? _____

4. Where does a computer store its data? _____

5. Can a computer think on its own? _____

F. Observe the pictures in each of the following. Now, write Input, process, and output for the correct ones.

1.





2.





G. Answer the following.

1. Write four differences between a computer and a man.

_____

2. Write two advantages of a computer.

_____

3. How does a virus attack a computer?

_____

4. Write two disadvantages of a computer.

_____

5. Name the three-step process on which a computer works.

_____

Activity

1. Given below are some tasks. Some of them are done by a computer while others are done by a man. Colour the boxes of tasks done by a man in blue and the boxes of tasks done by a computer in yellow.



I work faster.

I can store lots of information.

I can think and take my decisions.

I need food and water to work.

I never make mistakes.

I am not a machine.



2. Write the two things that you want to do using a computer.

Lab Time

Look around and write the names of five devices that work on electricity.

Life Skills

Always follow the rules in computer lab and help your teacher keep the computer lab neat and clean.

Connect to Subject

Make a chart on the comparison between man and machine and place it on your class notice board.

Note to the Teacher

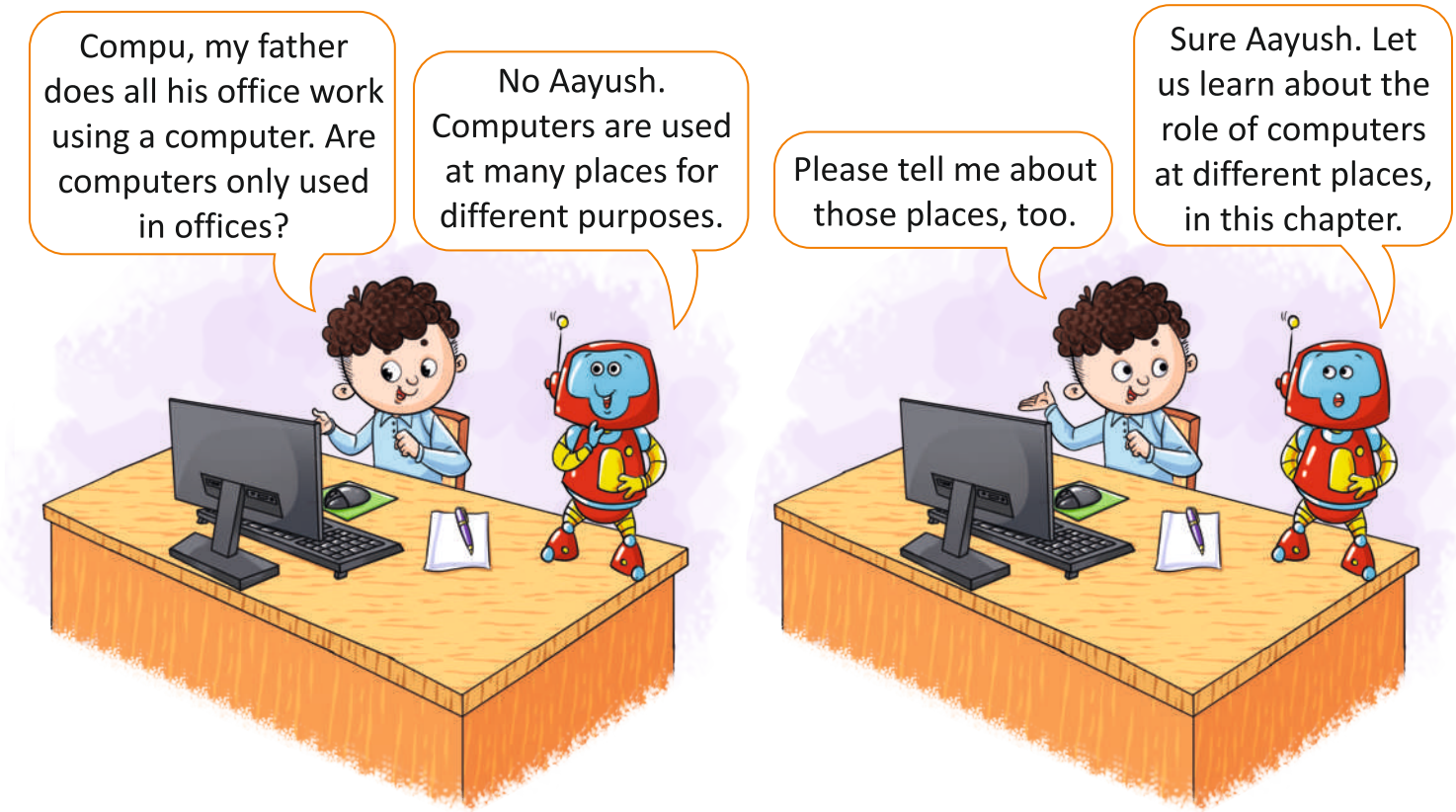
- Demonstrate the uses and importance of computers in our life.
- Show the I-P-O cycle with appropriate examples.
- Encourage students to give examples of the advantages and disadvantages of computers.

2

Role of Computers

KEY POINTS

- At Home
- In Office
- In Banks
- In Shops
- At Airports and Railway Stations
- At Research Centres
- In Hospitals
- In Police Stations
- Learning and Teaching



A computer has become an important part of our lives. We can find computers in many places. They are used at schools, offices, shops, banks, airports, etc., because of their multiple advantages.

Let us understand the role of computers in some of these places.

AT HOME



Fig. 2.1 – Computer at home

Many of us must have a computer, laptop, or smartphone at home.

We can perform several tasks, such as:

- Play games
- Watch movies
- Listen to music
- Draw pictures
- Search information on the Internet
- Download our favourite games or movies



Activity

What do you do with computer at home?

_____

IN OFFICE

In offices, most of the work is done on computers. Computers are used for:

- Maintaining records of items.
- Maintaining records of employees.
- Preparing bills and receipts.
- Preparing charts and reports.
- Sending and receiving e-mails.



Fig. 2.2 – Computers at office

IN BANKS

How do bank officers tell your parents about their bank accounts? Yes, they see the required information on the computer and inform us. Computers are used in banks for:

- Maintaining account details.
- Updating the accounts when we withdraw or deposit money.



Fig. 2.3 – Computers at bank

Activity

Have you ever visited a bank with your parents? Write the name of any two banks.

_____

_____

Brainy Fact

We withdraw money from the ATM with the help of a computer, fixed inside the ATM.



IN SHOPS

Computers are also used in shops for many reasons. Some of the tasks include:

- typing and printing bills.
- keeping the record of items.
- calculating the profit or loss.



Fig. 2.4 – Computers at shop

AT AIRPORTS AND RAILWAY STATIONS

Computers play an important role at airports and railway stations. They are used to:

- keep the records of passengers.
- keep a track of the timetable of aeroplanes and trains.
- book tickets.



Fig. 2.5 – Computers at railway station



Fig. 2.6 – Computers at airport

- provide information about arrivals and departures of flights and trains.

AT RESEARCH CENTRES



Fig. 2.7 – Computer at research centre

Computers play an important role in the field of research and development. In the field of research, computers are used to:

- get information about the universe.
- help in creating and launching rockets.
- store and calculate scientific data.

IN HOSPITALS

Computers play an important role in the health and medical sector.

In hospitals, computers are used to:

- keep record of the patient data and their disease.
- detect diseases.
- prepare medical report.
- monitor patients.
- perform operations.



Fig. 2.8 – Computer in hospital

IN POLICE STATIONS

A computer has become an integral part of any police station. It has changed the way people communicate and work in police stations. In police stations, computers are used to:

- keep the record of the criminals' data and their charges.
- maintain the record of complaints.



Fig. 2.9 – Computer in police sation

- research and detective work.
- prison security.

LEARNING AND TEACHING

Like other fields, a computer has made teaching and learning easy and interesting. It has a lot of benefits for both students and teachers.

Learning

We can learn our subjects easily by watching interesting tutorial videos on a computer.

We can find any information related to educational topics on the Internet. Several educational games help us learn engagingly and interestingly.



Fig. 2.10 – Computers in a library



Smart Path

Learning with the help of a computer or the Internet is called e-learning.

Teaching

Teachers can take the help of audio and video clips to teach the students in an interesting way.

They can create question papers, quizzes, and activities with the help of a computer.

They can also find information on any topic.



Fig. 2.11 – Computers in classroom

Online Teaching

A computer helps us to learn while sitting far away from our class.

Now, teachers and students can interact with each other with the help of a computer.



Fig. 2.12 – Online teaching

IMPACT OF COMPUTER ON SOCIETY

Computers have changed our society a lot.

- They help to generate business.
- They make learning easy and accessible to all.
- They make communication easy. Now, we can talk to our friends, sitting miles apart with the help of the video-calling facility available on computers.

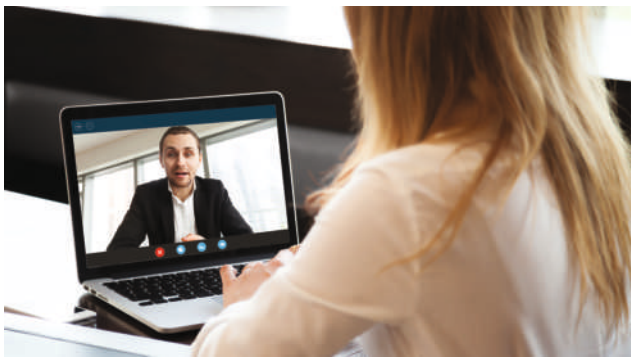


Fig. 2.14 – Video-calling

Word Glossary

- **E-mail** : It refers to an electronic mail. We use this to exchange digital message among computer users.
- **Detective** : A person, especially a police officer, who tries to solve crimes.

Let's Go Over

- We can play games, watch movies and listen to music using a computer.

- Computers are used in offices to maintain records of items and employees.
- Computers are used in banks to keep the details of accounts.
- Computers are used in shops to prepare bills and receipts.
- We can book tickets using a computer.
- We can learn a difficult subject easily with the help of a computer.
- Computers help us to find information on any topic.
- Computers help in hospitals to treat patients.
- Computers help in police stations to solve criminal cases.



Brain Buzz

A. Tick (✓) the correct options.

1. Computers are used in _____ to keep account details.

a. shops ○ b. banks ○

2. Learning using a computer is called _____.

a. E-learning ○ b. E-commerce ○

3. Teachers can take the help of _____ to teach students in an interesting way.

a. audio clips ○ b. books ○

4. Computers are used in _____ to book tickets.

a. airports ○ b. offices ○

5. We can download _____ using computers.

a. games ○ b. money ○

B. Fill in the blanks.

1. In offices, computers are used to send and receive _____.

2. Computers keep the details of _____ in banks.



3. Computers are used in _____ to detect diseases.

4. In the field of research to create and launch _____ we use computers.

5. Computers are used to prepare bills and _____ in offices.

C. Write T for true or F for false statements.

1. Computers are used to store and calculate scientific data. _____

2. Teachers can create question papers and quizzes using computers. _____

3. Learning is tough using a computer. _____

4. We cannot find information on educational topics on the Internet. _____

5. We can draw pictures with the help of a computer. _____

D. Answer the following.

1. Write any two places where we use computers.

_____

_____

2. Write two uses of computers at offices.

_____

_____

3. What is e-learning?

_____

_____

4. What is the purpose of computers at airports and railway stations?

_____

_____

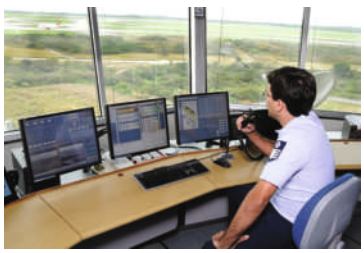
5. How is a computer helpful to teachers?

_____

_____

Activity

A. Match the pictures with the places where they are used.

Pictures		Places
1.		a. Teaching
2.		b. Home
3.		c. Shop
4.		d. Airport
5.		e. Office

B. Identify five places in the given grid where we use computers.

H	O	M	E	Q	Y	H
O	F	I	P	S	K	S
J	F	G	E	H	T	K
A	I	R	P	O	R	T
E	C	F	Q	P	E	L
T	E	B	N	M	S	A
B	Q	D	Q	W	E	E
U	G	D	R	T	A	I
K	B	A	N	K	R	O
H	G	D	G	T	C	Q
W	V	N	M	U	H	I

Lab Time

How is the computer helpful to you? Also, write about how the computer helps your parents.

Me





_____

_____

_____

Father



_____

_____

_____

Note to the Teacher

- Demonstrate the uses of computers in schools.
- Show students some bills, reports, letters, or tickets.
- Encourage students to give examples of the places where they use computers.