

**PREVOCATIONAL  
PROGRAMME**

Year  
Part **1**

**INFORMATION &  
COMMUNICATION  
TECHNOLOGY**

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# FOREWORD

In view of the reform of the PreVocational Education at Secondary level, we are pleased to provide to Educators and PreVocational students teaching and learning materials in line with the new Curriculum Framework-Secondary (PreVocational) which will now comprise of four years of schooling.

The objective of the PreVocational education is to provide opportunities to learners to obtain a formal qualification after four years of schooling. It will also provide learners with opportunities to branch out in either, further training in a number of vocational areas or to join the world of work or even to reintegrate the academic stream.

This project necessitates a well-planned teaching based on a set of carefully designed materials. The MIE is providing the pedagogical support and appropriate materials for both teachers and pupils. We believe that all children are educable and we have incorporated in the text materials that would provide learning experiences appealing to a diversity of learners. We wish that teaching is based on a collaborative and consensual approach with the students as well as with the support of the home.

We also hope that these materials will help everyone to obtain a clear idea of the PreVocational project. You will surely notice that the materials can benefit any learner and a much wider group of students than just the PreVocational stream. It will be followed by other more exciting ones to cover the whole of the four years.

I wish to thank all the staff of MIE under whose guidance these materials have been produced and the team of MIE graphic designers who have produced a wonderful piece of work. My thanks also go to the staff of the MITD who have been associated with the writing of the materials, the Educators from secondary schools who have contributed in various panels and the PreVocational Inspectors for their constructive comments.

***Sheela Thancanamootoo***  
***Director, MIE***

# INTRODUCTION

This book is the first part of Year 1 book of a series of books (Year 1, Year 2, Year 3, and Year 4) designed for learners in the Pre-Vocational stream over a period of four years.

With the increased use of ICT in almost every aspect of our daily lives, ICT has become a potentially powerful enabling tool for educational change and reform. Effective use of ICT at school can help to develop transferable ICT skills and provide useful support in the different domains of the PreVocational Curriculum.

The units covered in this book are presented in the order set below:

***Unit 1: Computers in our daily life***

***Unit 2: Knowing the computer room***

***Unit 3: Fundamentals of a computer system***

The first three units are mainly to reinforce the fundamental concepts of computers that learners may have conceived from the primary school level. The second part of Year 1 book will consist of three other units.

It is expected that educators will enlighten learners in their understandings by simplifying the use of the material presented. Worksheets at the end of each topic are to be worked out by the learners and collected by educators. Each learner will have his/her portfolio where all the worksheets are kept. These portfolios are to be kept by the respective educators who can assess the level of competencies achieved by the learners.

The ICT panel hopes that learners will enjoy working through the various class activities and worksheets written in each unit.



## PANEL MEMBERS

**Coordinator:** C. Li Luen Ching, *Senior Lecturer, MIE*

**Assistant Coordinator:** P. Sooben, *Lecturer, MIE*

- K. Bhatoo-Sunkoorah, *Instructor, MITD*
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# TABLE OF CONTENTS



## UNIT 1 COMPUTERS IN OUR DAILY LIFE

1.1	Computer applications	2
1.2	Main benefits in using computer in everyday life	4
1.3	Computer and human brain	6
1.4	Microchips in computers	7
	<i>Activity Sheet 1</i>	
	<i>Activity Sheet 2</i>	
	<i>Activity Sheet 3</i>	
	<i>Activity Sheet 4</i>	

## UNIT 2 KNOWING THE COMPUTER ROOM

2.1	Computer room	20
2.2	Items in a Computer room	22
2.3	How to work in a Computer room/laboratory	23
2.4	Care of the Computer devices	25
2.5	Sitting posture	25
2.6	Health problems related to bad postures	28
2.7	Correct posture when using a computer	30
	<i>Activity Sheet 1</i>	
	<i>Activity Sheet 2</i>	
	<i>Activity Sheet 3</i>	

## UNIT 3 FUNDAMENTALS OF A COMPUTER SYSTEM

3.1	Types of Computer system	38
3.2	Computer system	39
3.3	System unit	41
3.4	Input devices	43
3.5	Output devices	45
	<i>Activity Sheet 1</i>	
	<i>Activity Sheet 2</i>	
	<i>Activity Sheet 3</i>	
	<i>Activity Sheet 4</i>	
	<i>Activity Sheet 5</i>	

# Unit 1

## COMPUTERS IN OUR DAILY LIFE



### Aim:

The aim of this unit is to create awareness of the uses of computers in everyday life.



### Objectives:

At the end of the unit, you should be able to:

- identify the main types of computer applications.
- name the places where computers are used.
- be aware of the main benefits in using computers in everyday life.
- differentiate between a human brain and a computer.



### Instructions to teachers

This stands for **Teacher**:

Do the activity first orally followed by written tasks.

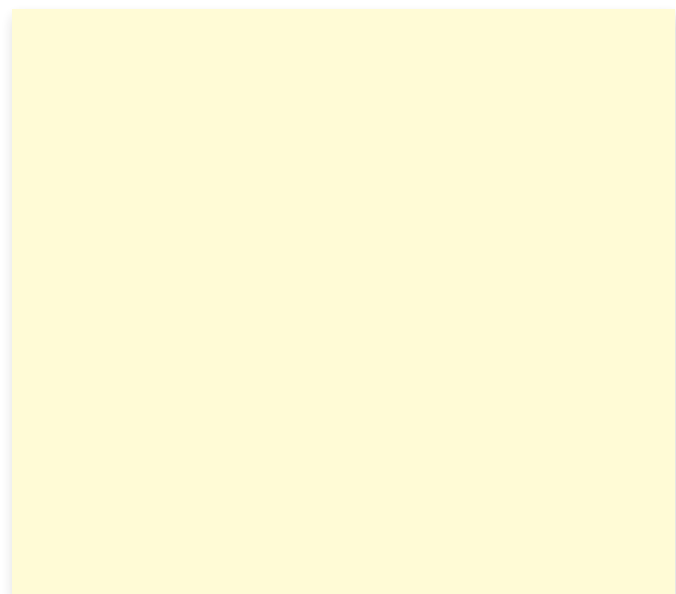
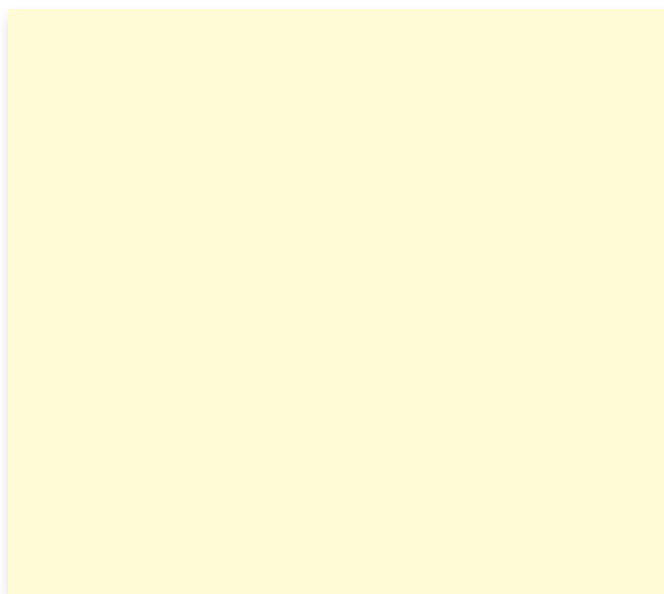
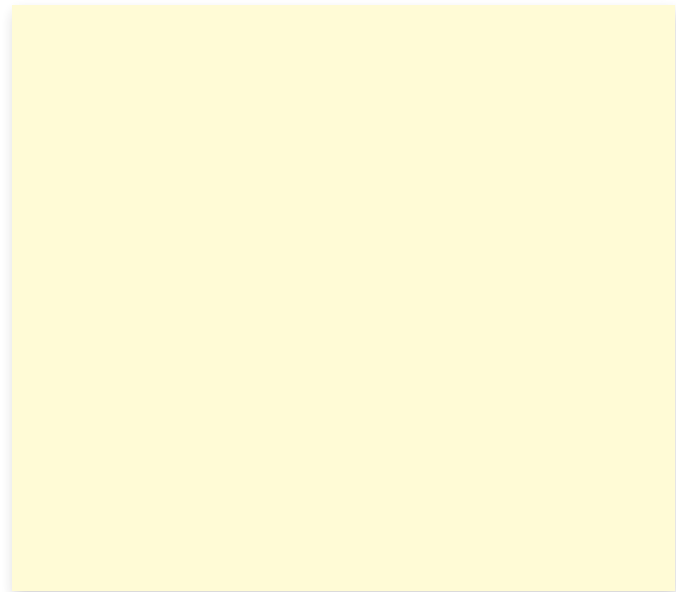
## 1.1 COMPUTER APPLICATIONS

Computers are used in everyday life, e.g. at home, in banks, in supermarkets, even in schools, and in other places.



### *Class Activity*

Ask pupils to find pictures of computer use and paste them in the blank spaces below. Label each picture.





Now, we are going to see how computers are used in different places.

**Examples:**



Supermarket



Meteorological Purpose



Making of Cars



Telephone Operators

## 1.2 MAIN BENEFITS IN USING COMPUTERS IN EVERYDAY LIFE

Computers are machines used to:

- enter data  
e.g. A doctor is entering data on her /his computer.



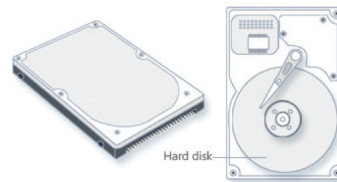
- store information  
e.g. Information can be stored on pendrives, CD/DVD, or hard disk.



Pen drive



CD/DVD



Hard Disk

- do complicated calculations  
e.g. Scientist working on computers to do research.



- write text (this book was typed using a computer).



## Benefits of using a computer

Computers have many advantages:

1. It performs difficult calculations.
2. It provides accurate information within seconds.
3. It is used to control other electronic devices such as traffic lights, air conditioners, X-ray machines used in hospital. Even doctors use computers as an aid to do surgery.
4. It is used to view pictures and video films.
5. It is used by scientists.
6. Airports and sea ports use computers to control the movement of the airplanes and ships.
7. People can use their computers to do their shopping through the Internet.

*Could you add some more advantages?*

8. ....
9. ....
10. ....

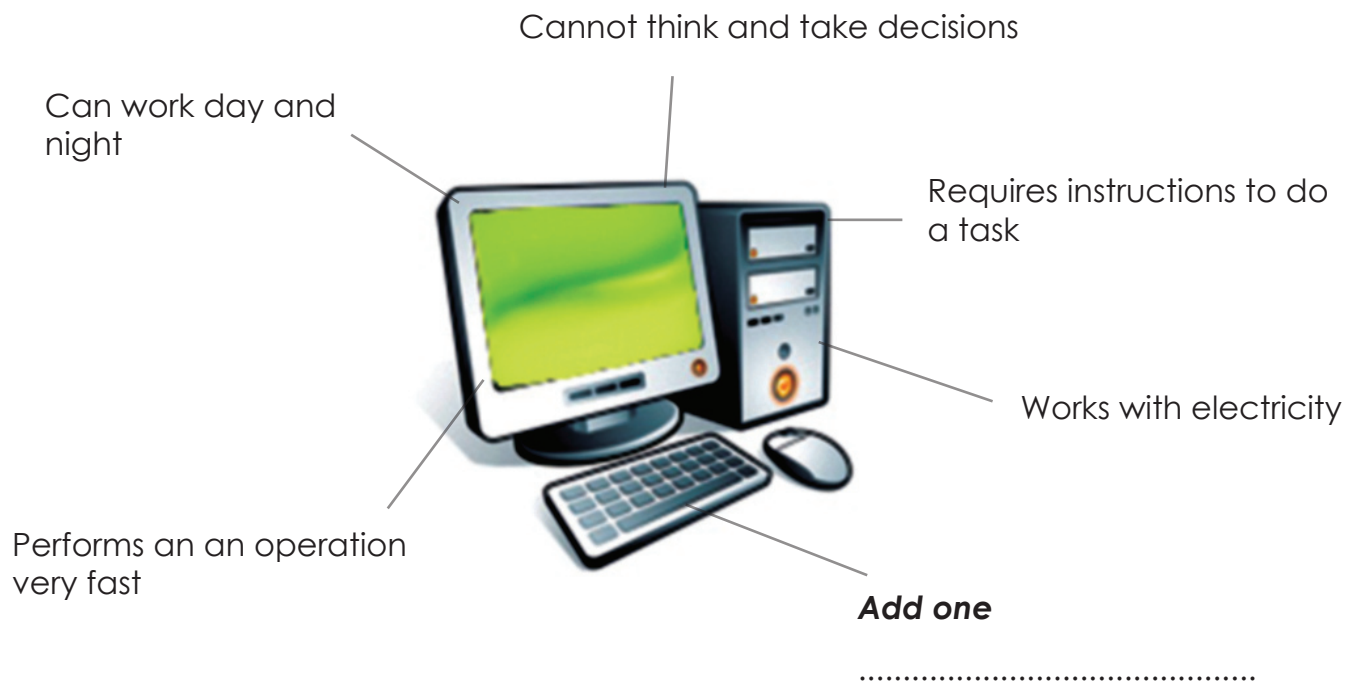
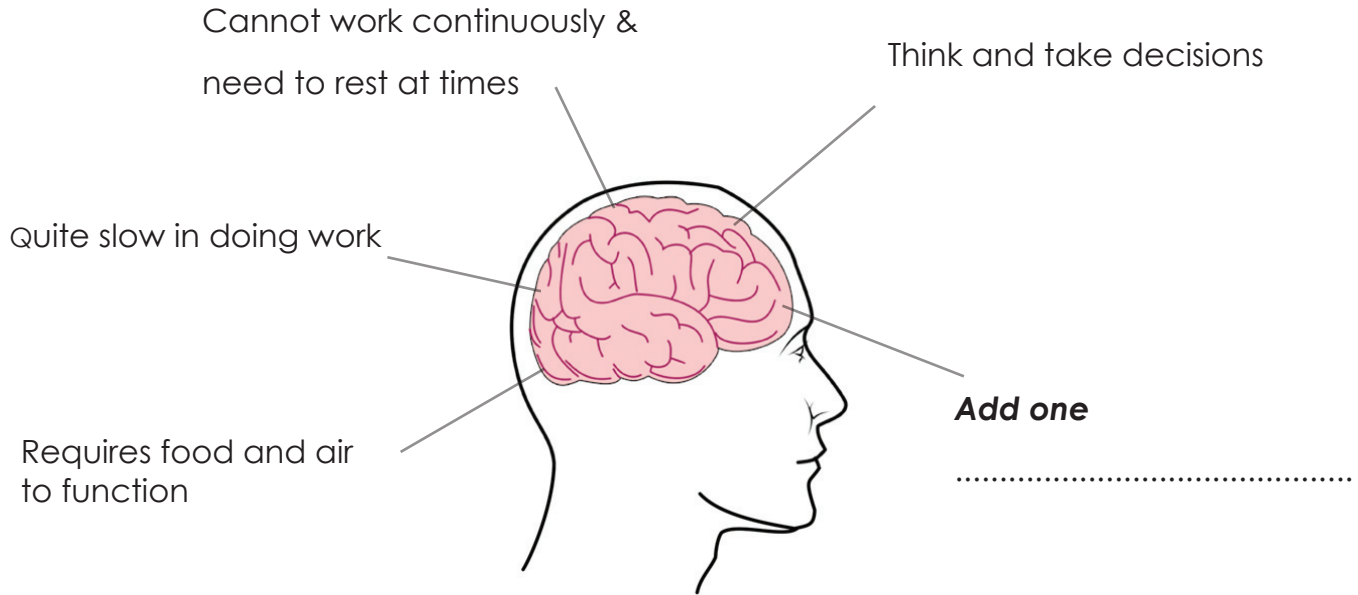


### *Class Activity*

In the table below, list one computer application in the places mentioned. The first one has already been done for you.

Places	Computer Application
1. Home	<i>Computers are used to play games, type letters, or surf on the Internet.</i>
2. Hospital	.....
3. School	.....

### 1.3 COMPUTER AND HUMAN BRAIN



## 1.4 MICROCHIPS IN COMPUTERS

Computers use microchips. Appliances containing microchips are widely used nowadays at home, in office, and in industries. For example, a microwave oven contains a microchip which enables us to heat or even cook our food automatically. There are also other devices which use microchips.

### Examples of devices using microchips.

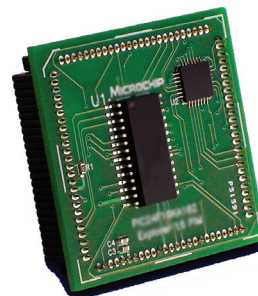


Camera



Washing machine

Inside a computer there are many microchips.

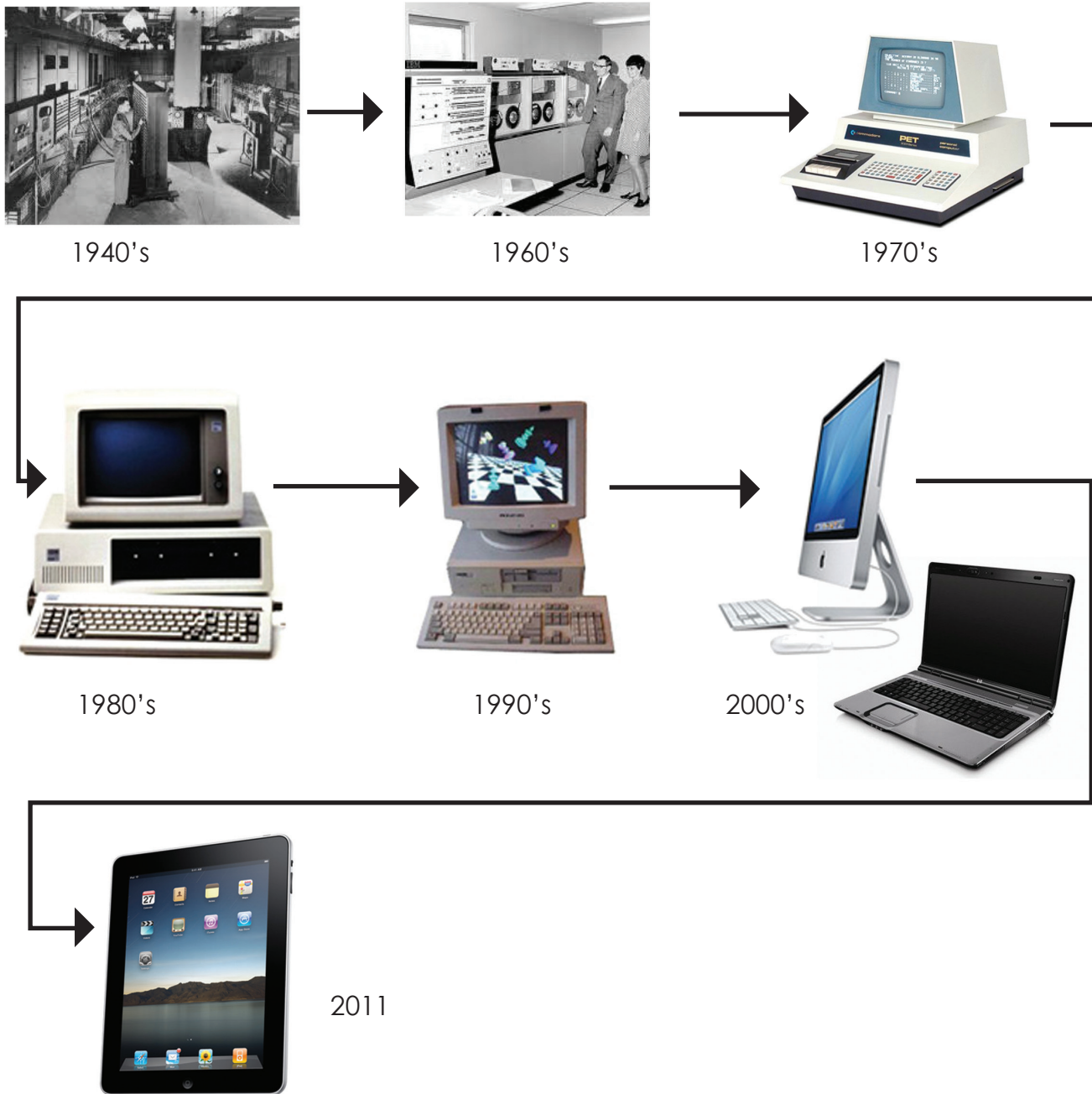


Microchip

## Evolution of computers

The first computer was very expensive and bigger than a classroom. Nowadays, there are small computers which contain microchips such as laptops, notebooks, mobile phones and other home appliances.

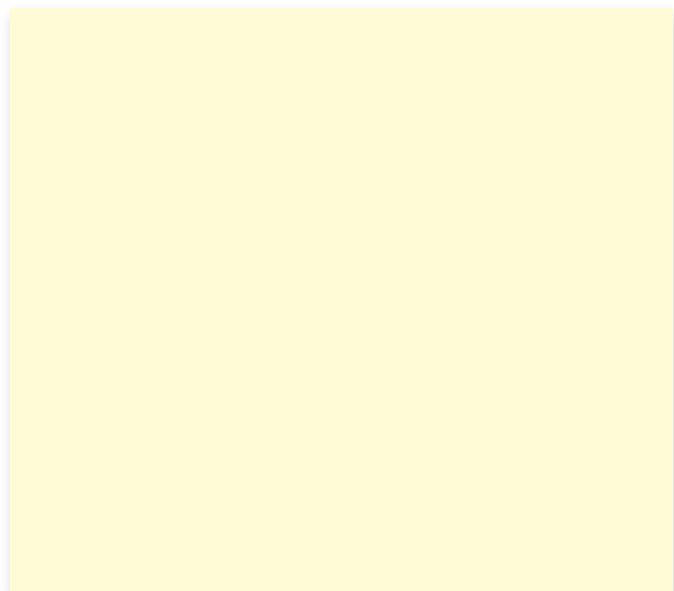
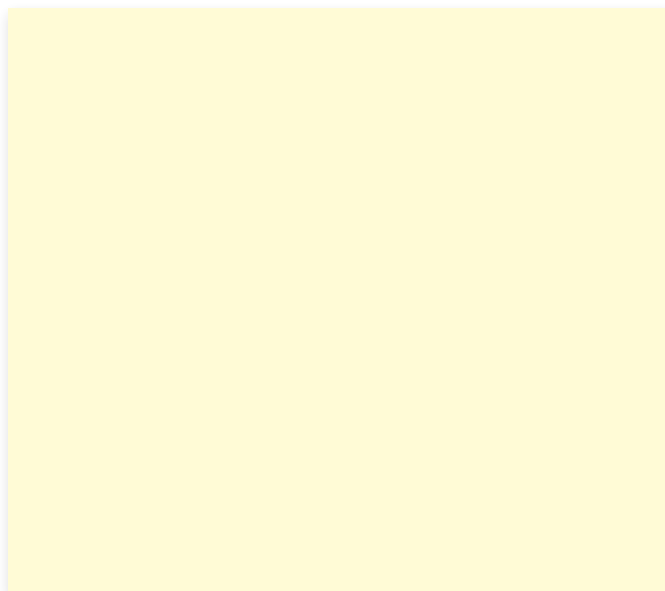
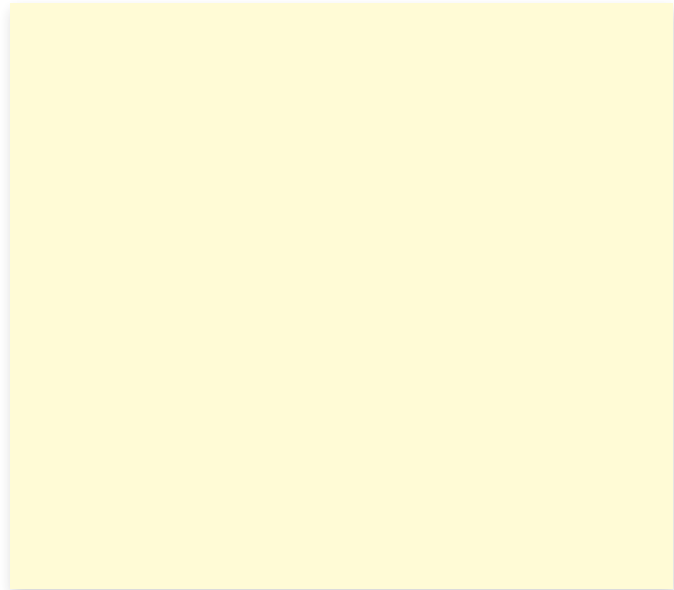
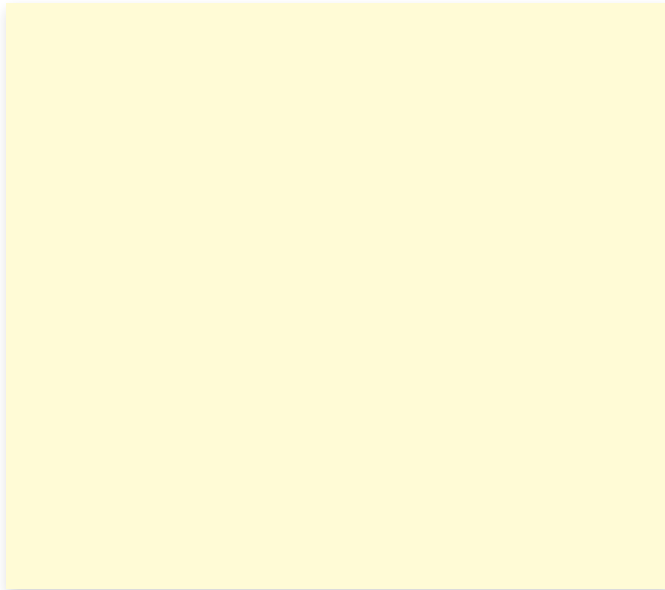
Those devices are available everywhere and are portable, cheap, programmable, automatic and are becoming smaller in size.





### *Class Activity*

Ask pupils to find pictures of devices containing microchips and paste them in the spaces below.









## UNIT 1: ACTIVITY SHEET 1

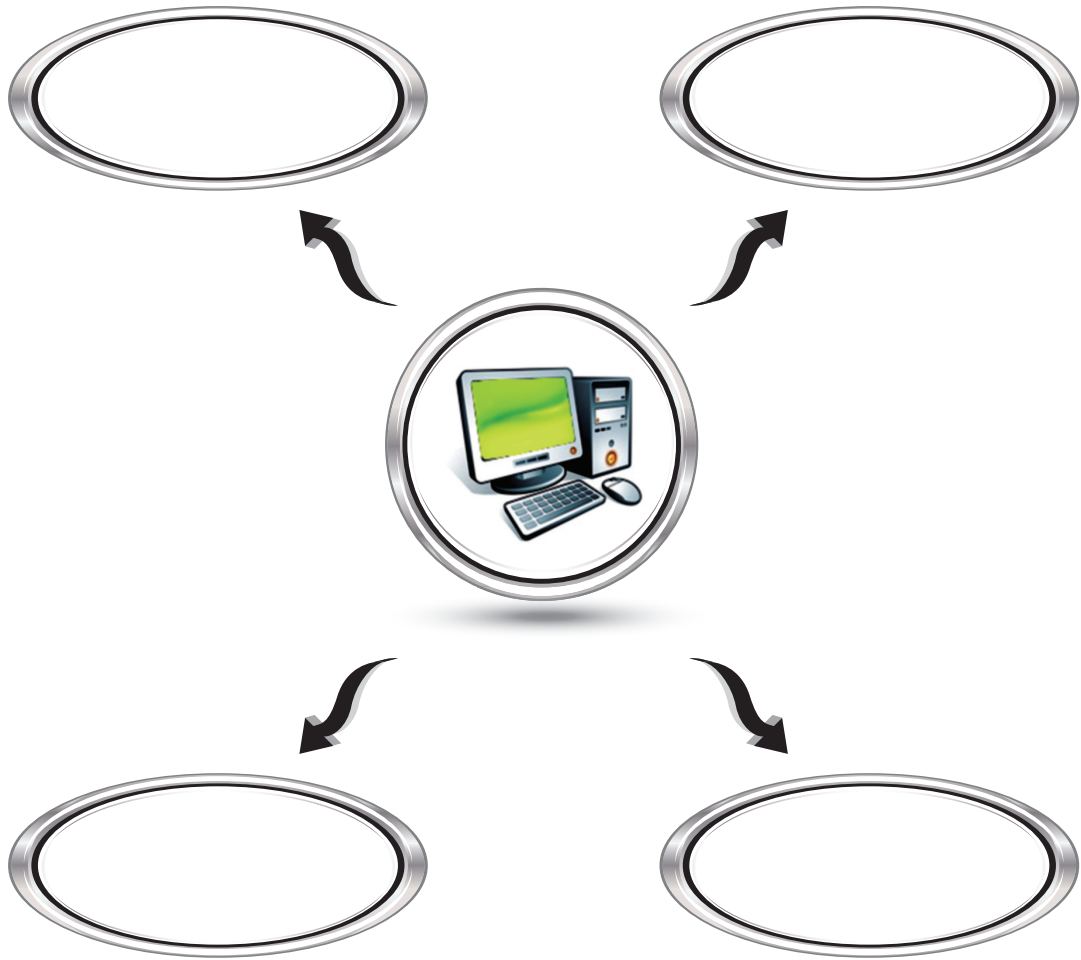


### Computer Applications

Name: .....

Class: .....

Fill in the blank shapes with the name of places where computers are used.







## UNIT 1: ACTIVITY SHEET 2



### Computer Applications

Name: .....

Class: .....

Complete the following with the related activities that can be performed by a computer.

*Can use a computer to*



Office

*Can use a computer to*



Shop

*Can use a computer to*



Library





## UNIT 1: ACTIVITY SHEET 3



### Main benefits in using computers in everyday life

Name: .....

Class: .....

#### Activity A:

I can use computer to:

1. ....

2. ....

#### Activity B:

State whether the following statements are **True (T)** or **False (F)**.

1. Computers cannot store information for later use.
2. Computer can do difficult calculations.
3. Films and images can be viewed from a computer.
4. Satellites can be moved and controlled by computers.
5. Traffic lights are not controlled by computers.
6. Accidents of airplanes can be avoided with the help of computers.





## UNIT 1: ACTIVITY SHEET 4

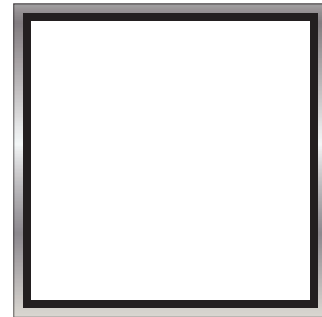
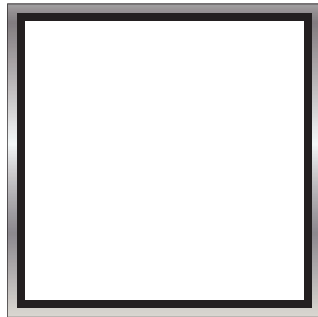
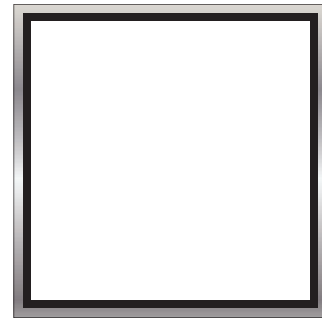
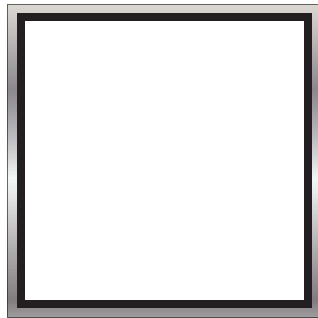


### Devices using microchips

Name: .....

Class: .....

In the blank square draw a device which operates with a microchip.







# Unit 2

## KNOWING THE COMPUTER ROOM



### Aim:

The aim of this unit is to have an understanding of the practices when working in a computer room.



### Objectives:

At the end of the unit, you should be able to:

- distinguish between a computer room and other places where computers are used.
- identify the items and layout design of a computer room.
- be aware of the desirable and non-desirable behaviours in a computer room.



### Instructions to teachers

This stands for **Teacher** to do the activity first orally followed by written tasks.

## 2.1 COMPUTER ROOM

A computer room is a place where several computers are displayed.

1. Computers displayed in parallel.



2. Computers displayed in a circle.



3. Computers used in classroom.



Interactive  
Whiteboard

## Examples of different types of computer room



Call centre room



Control room



Office



Computer laboratory

## 2.2 ITEMS IN A COMPUTER ROOM

In a computer room you can see computers on tables, a whiteboard, chairs, air conditioners or fans.



White board



Screen

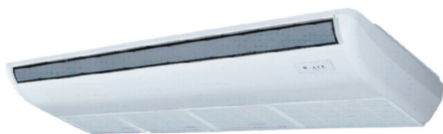
Projector



Table



Interactive board



Air conditioner



Printer



Computer table



Chair

## 2.3 HOW TO WORK IN A COMPUTER ROOM/LABORATORY

To work in a computer room, you need to follow some rules.

### Examples:

- Before entering a computer room, get the permission of your teacher.



- Do not eat or drink inside a computer room.



- Do not touch or step over broken cables.



### *Class Activity*

List down **three** other good practices in a computer room.

1. ....
2. ....
3. ....

List down **three** bad practices that are not allowed in a computer room.

1. ....
2. ....
3. ....



### Some Safety Guidelines

- Obtain your teacher's permission before performing an activity in the computer room, including printing a document.
- Do not touch broken plug or cable; instead report it immediately to your teacher.
- Do not step, connect or disconnect any cable or plug without permission.
- Do not open the system unit casing or monitor casing.
- Do not eat and drink in the computer laboratory.
- Do not run and play in the computer room.
- Do not insert any metal object such as clip, pin and needle into the computer casing.
- Do not remove anything from the computer laboratory without permission.

### Different parts of a Computer



**NOTE:** You will learn more on the parts of a computer system in **Unit 3**.

## 2.4 CARE OF THE COMPUTER DEVICES

Various devices that are used in the computer room, such as the keyboard, mouse and printer are **fragile** and need special care.

### Guidelines to handle computer devices properly

- Do not operate your computer during heavy rain or lightning.
- Do not switch your PC on or off too rapidly. Wait at least 2 minutes before you switch on your PC after it has been switched off.
- Always shut down the computer properly in the correct order, that is, select the Shut Down option.
- Avoid exchange, floppy disk, pendrives, CD/DVD.
- Sharing of storage devices can infect your computer with viruses.
- Never put the devices in direct sunlight; they may be damaged by sun rays.

## 2.5 SITTING POSTURE

Computers are quite safe to work with, but you need to be properly seated otherwise you can have health problem.



### Class Activity

(a) Tick (✓) the correct position.

POSITION A




POSITION B




POSITION C



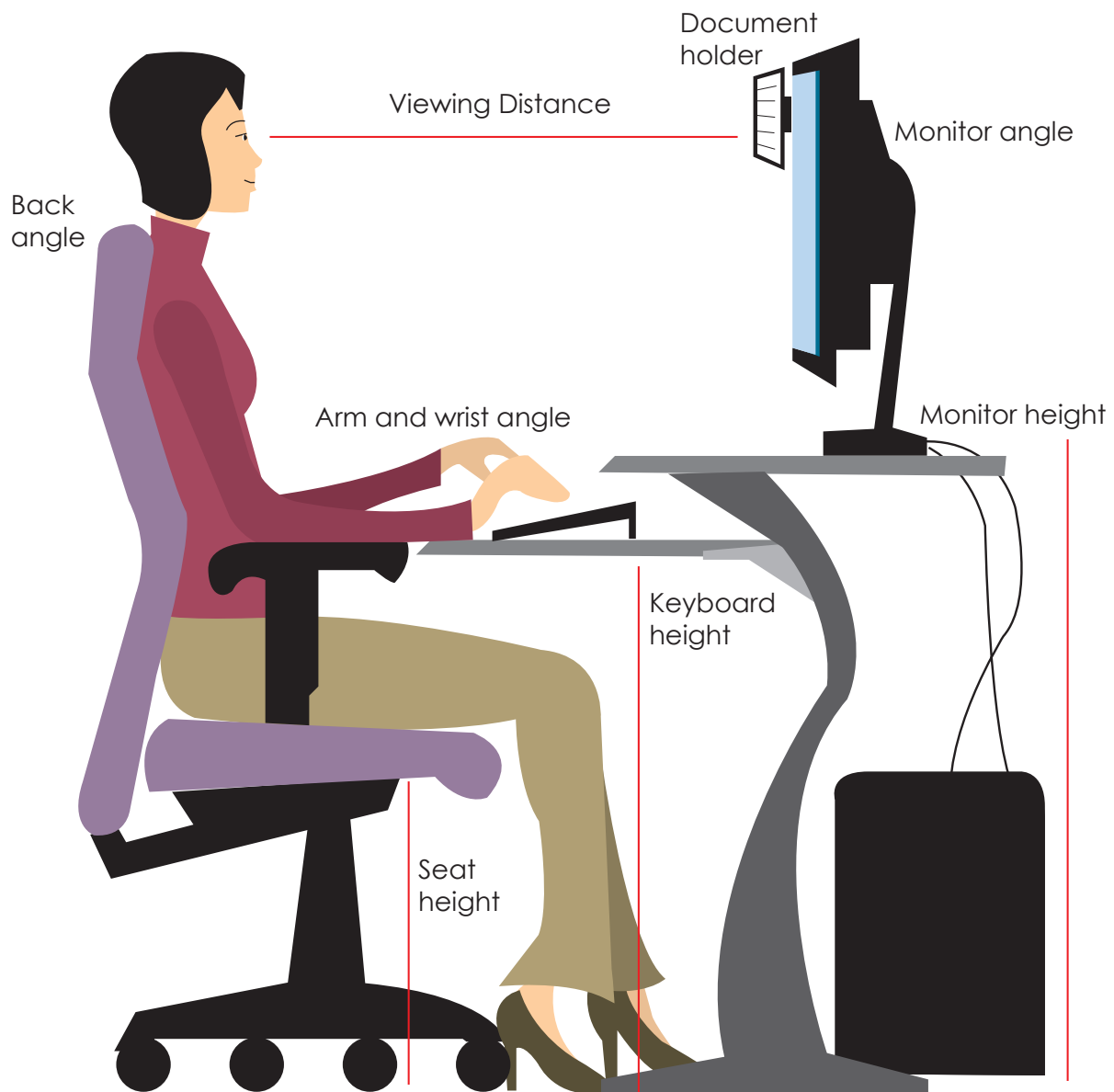




(b) Why is it the correct position?

1. ....
2. ....
3. ....

### Proper Posture when working with a computer





## Good practices when sitting at the computer table

- Ensure that the chair, table and keyboard are properly placed at the right level.



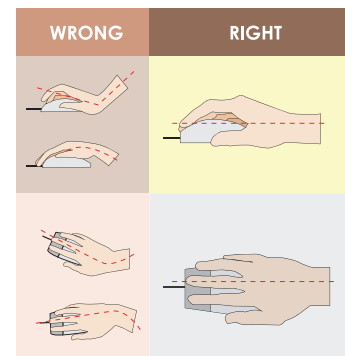
- Always sit at right angle where the eyes, wrist and neck are properly positioned in front of the computer.



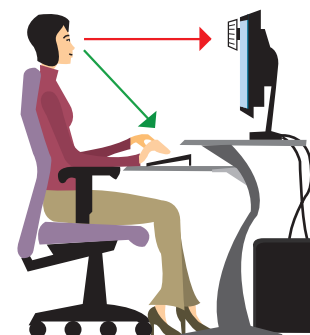
- When typing, keep into account that your fingers are well placed on the keyboard, left fingers on the keys **ASDF** and the right hand on the keys **HJKL**. This will prevent wrist, shoulder and back pain.



- The movement of the mouse should be rotational.



- Your eyes must target the screen not your fingers when typing.



## 2.6 HEALTH PROBLEMS RELATED TO BAD POSTURES



The followings are some of the health problems that may occur, if the correct posture is not put into practice when using the computer, even though the correct chair is used. From the position given below, let us study their effects.



Position 1: Slum/Slough



Position 2: Forced upright



Position 3: Poised and relaxed



### *Class Activity*

Tick (✓) the position you find to be the correct one.

POSITION 1

POSITION 2

POSITION 3

Both the Position 1 (Slum/Slough) and Position 2 (Forced upright) will:

- Prevent good breathing.
- Cause stiff neck and shoulders.
- Impede digestion.
- Result in general aches and pains.
- Affect circulation and cause wrist pain.
- Cause lower back pain.


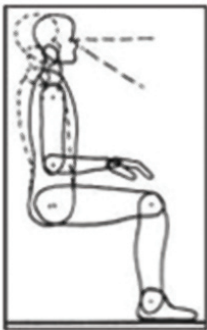
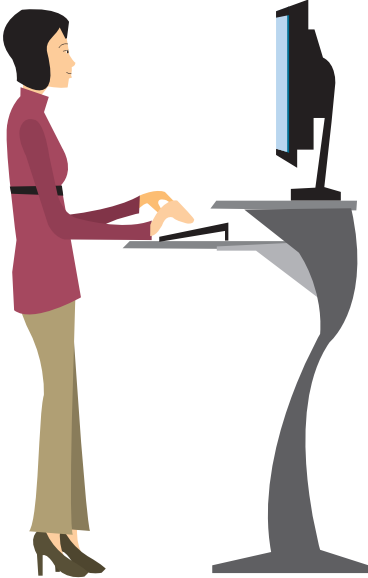

Position 3 (Poised and relaxed) is by far the best for your body as it requires the least amount of effort on your behalf. Your body will quite happily balance itself. Also this position:

- Reduces eye strain.
- Eliminates headache.
- Gets rid of your stiff neck.
- Prevents shoulder and wrist pain.
- Reduces backache.

## 2.7 CORRECT POSTURE WHEN USING A COMPUTER



Using a computer either by standing or sitting requires certain correct postures to avoid pains to our body.

<i>Sitting Posture</i>	<i>Standing Posture</i>
<p>Your back and neck are approximately vertical and in-line, the thighs are approximately horizontal, and the lower legs are vertical.</p>   <p>Upright sitting posture</p>	<p>Your legs, back, neck and head are approximately vertical and in-line, the thighs are approximately vertical. The user may also elevate one foot on a rest while in this posture.</p>   <p>Standing posture</p>



## UNIT 2: ACTIVITY SHEET 1

Name: .....

Class: .....

Encircle the items that are found in a computer room.







## UNIT 2: ACTIVITY SHEET 2

Name: .....

Class: .....

Place each of the following sentences in its respective column.

- i. Sit on a comfortable chair at right angle.
- ii. Take soft drink near the keyboard.
- iii. Place the fingers properly on the keyboard.
- iv. Place the screen at least one metre away.
- v. Hold the broken cables and repair them.
- vi. Put heavy things on the computer or on any devices.
- vii. Switch off the computer through proper shut down.
- viii. Play in the computer room.
- ix. Pendrives and diskettes must be scanned for viruses before use.
- x. Remove parts of computer.

<b><i>Do's in a computer room</i></b>	<b><i>Don'ts in a computer room</i></b>
<b>1</b>	<b>1</b>
<b>2</b>	<b>2</b>
<b>3</b>	<b>3</b>
<b>4</b>	<b>4</b>
<b>5</b>	<b>5</b>







## UNIT 2: ACTIVITY SHEET 3

Name: .....

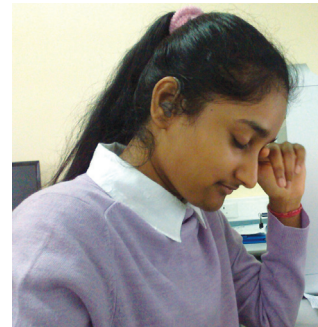
Class: .....

Match each of the health problems to its corresponding picture.

Eye strain



Wrist pain



Neck Pain





# Unit 3

## FUNDAMENTALS OF A COMPUTER SYSTEM

### Aim:

The aim of the unit is to have an understanding of the fundamentals of a computer system.

### Objectives:

At the end of the unit, you should be able to:

- differentiate between the different types of computers.
- identify the physical parts of a computer system.
- describe the functions of each part of the computer system.
- list out the uses of computers.



### Instructions to teachers

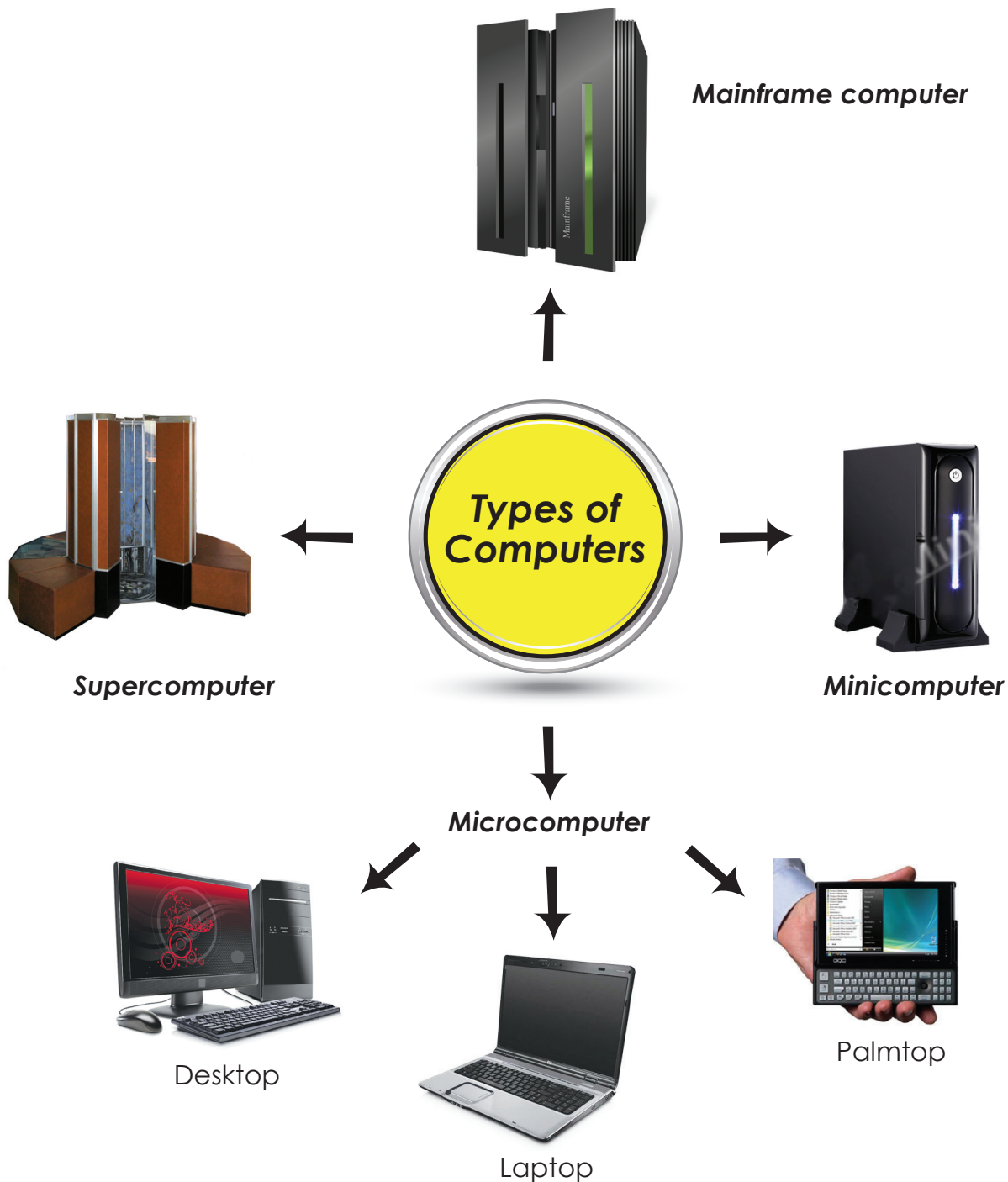
This stands for **Teacher** to do the activity first orally followed by written tasks.

### 3.1 TYPES OF COMPUTER SYSTEM

Different types of computers are used in our daily life. Now we are going to learn more on the computers which are used in different places.

The computers which we see in the computer room are called microcomputers. Other types of computers are used in different places, such as banks and companies.

The different types of computers are shown below:

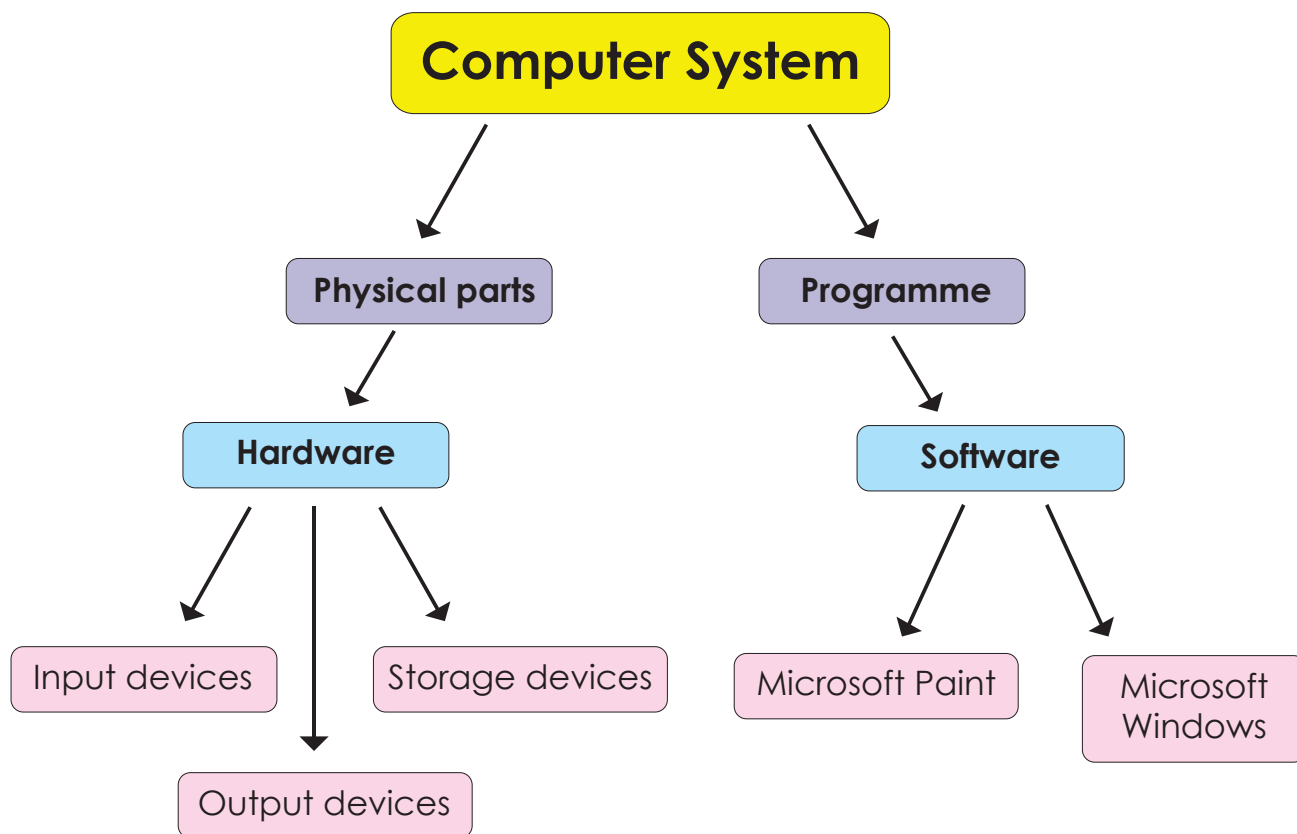


**Comparisons between different types of computers.**

Type	Physical size	Cost	Usage
Microcomputer	Smallest	Cheapest	At home, in schools and offices
Minicomputer	Small	Cheap	In universities, medium-sized companies and banks
Supercomputer	Largest	Very expensive	In scientific research, weather forecasting, space exploration and military purposes

**3.2 COMPUTER SYSTEM**

A computer system consists of the physical parts and the computer programs. The physical parts are known as the **hardware** and the computer programs are known as **software**.



## Hardware

**Hardware** is the physical parts that we can see and touch namely the system unit and the parts that are connected to it.

### Physical parts of a computer system

The computer system is made up of several parts as shown in the diagram below.



There are basically four components namely the system unit, the keyboard, the monitor and the printer.

## Software

**Software** is the term used to denote all computer programs.

Some examples are:

1. Microsoft Windows



2. Microsoft Word



3. Microsoft Paint





### *Class Activity*

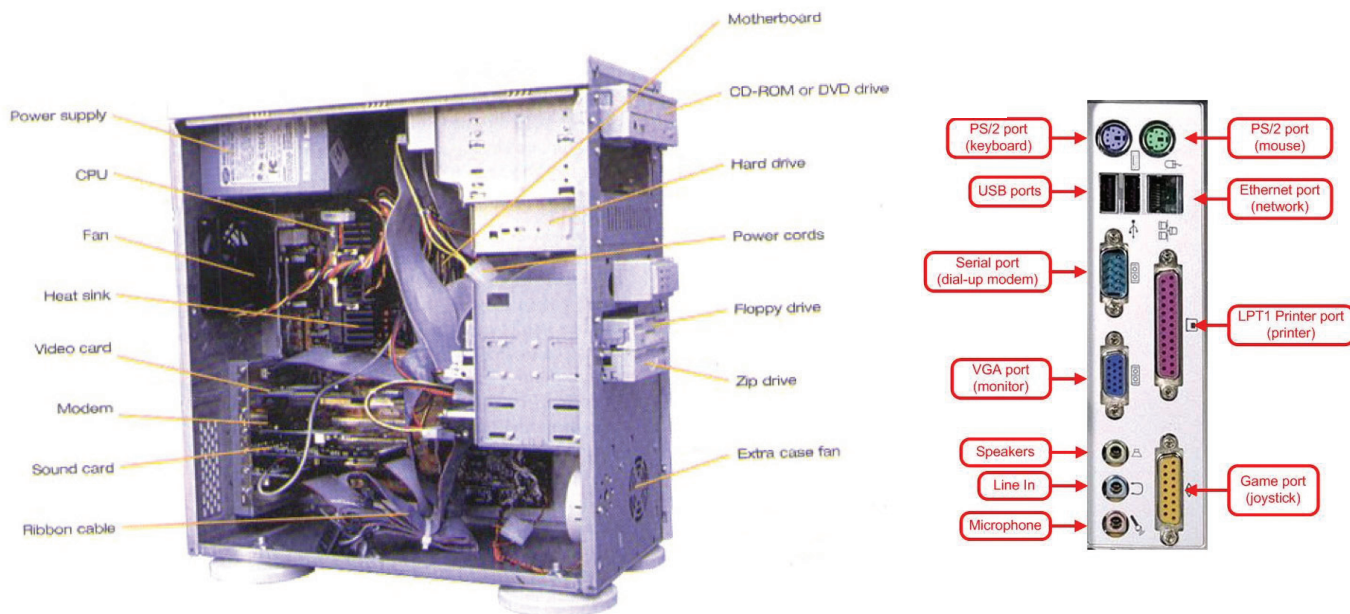
Name the different physical parts of a computer system.

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....

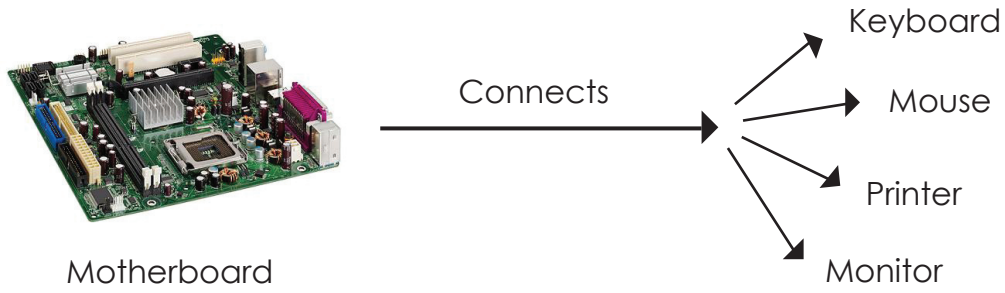
### 3.3 SYSTEM UNIT

The system unit is found in a rectangular box. The main components are:

- **a motherboard**
- **storage devices**
- **power supply**



## Motherboard



## Storage devices

1. Removable devices - that is can be removed

USB pen



Floppy disk



Memory card



DVD / CD-ROM



2. Non Removable devices : inside the Computer - that is cannot be removed

Hard disk



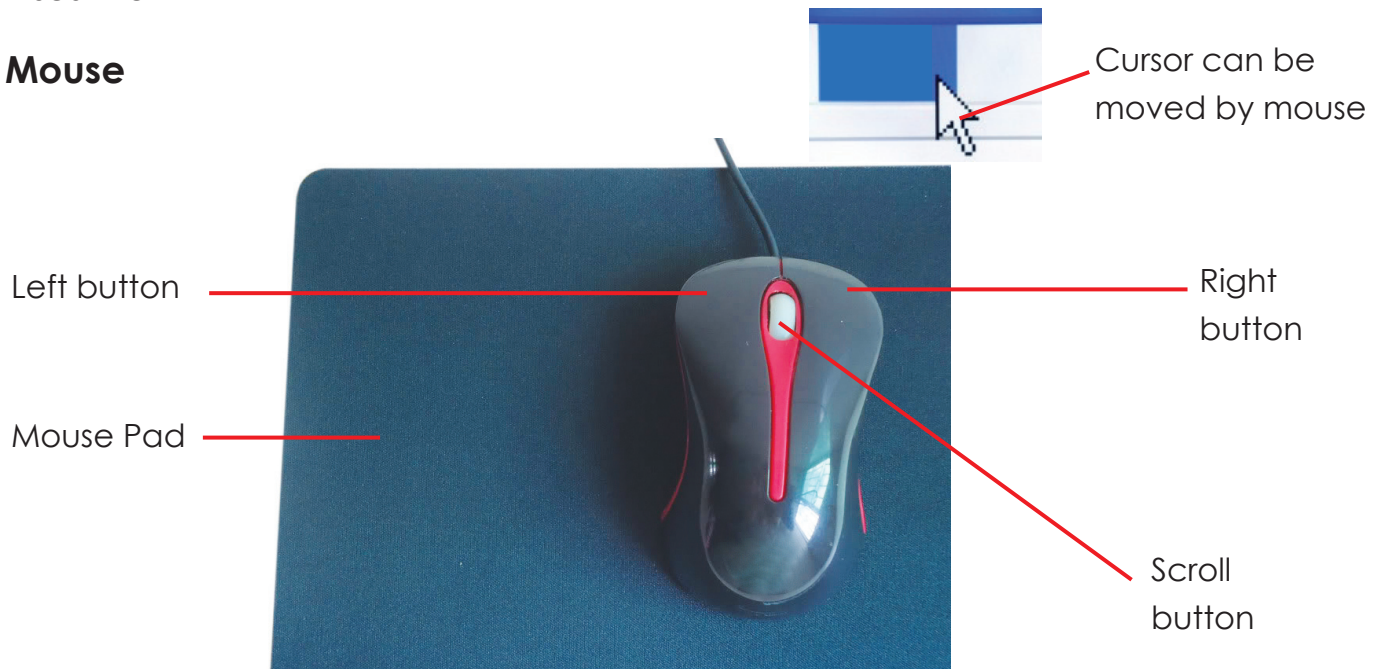


### 3.4 INPUT DEVICES

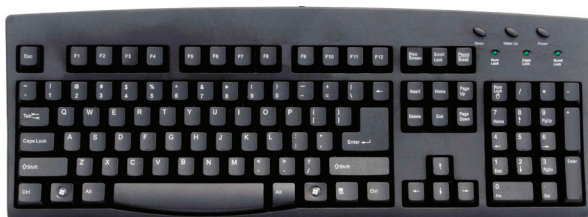
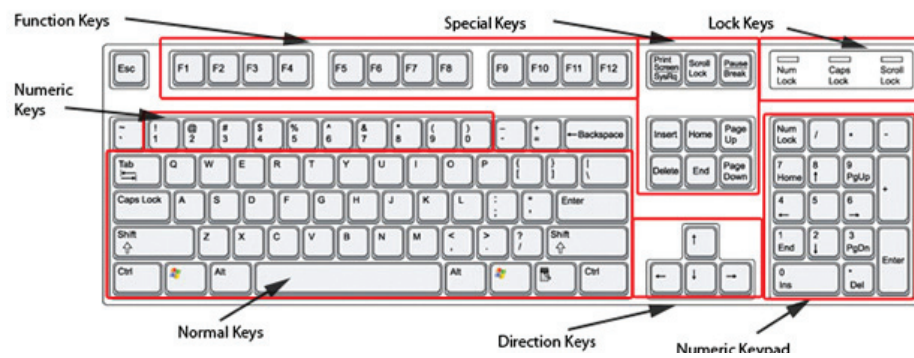
Input devices are used to **enter data** into a computer. There are several types of input devices:

- mouse
- keyboard
- webcam
- microphone
- joystick
- scanner

#### Mouse



#### Keyboard



Standard keyboard



French keyboard

## Web camera



## Microphone

A microphone, sometimes called a "mic" (pronounced "mike").



## Joystick

A joystick looks like a stick fixed onto a box. It controls the cursor on the screen. Joysticks are often used to **play video games**, and usually have one or more push-buttons.



## Scanner

A scanner is used to 'scan' pictures or text and to transfer the pictures or text in the computer.



### 3.5 OUTPUT DEVICES

**Output devices** are used to output information from the computer. There are several types of output devices.

- **Visual Display Unit (VDU) or Monitor**
- **printer**
- **plotter**
- **speaker**

#### Visual Display Unit (VDU) or Monitor

The **Visual Display Unit** is also called a **monitor** and is one of the most common output devices. It looks like a TV screen. Nowadays monitors have flat screen. It displays text and graphics in multiple colours.



## Printer

The printer is an output device. It prints information from the computer on paper called a hardcopy. There are several types of printers. Some of them are:

- **Dot matrix printer** - it is a slow and noisy printer.
- **Inkjet printer** - It uses coloured ink and is quiet, light weight and quite reliable.
- **Laser printer** - It is the fastest printer and prints images using a laser beam.



## Plotter

A plotter produces its output using special pens across the paper to create a drawing. It is used by architects and designers to produce their drawings and designs. This is often found in the office of architects and engineers.



## Speaker

A speaker is also called a loudspeaker. It produces sound in response to an electric audio signal input. The output sound can be music, dialogue from films, people voice or messages from the computer.





## UNIT 3: ACTIVITY SHEET 1

Name: .....

Class: .....



### ***At school we can use the computer:***

1. To draw shapes and pictures.
2. To.....
3. To.....

### ***At home we can use the computer:***

1. To send emails.
2. To.....
3. To.....





## UNIT 3: ACTIVITY SHEET 2

Name: .....

Class: .....



In the space below, use your pencil to draw any **four** different parts of a computer system and name the parts.







## UNIT 3: ACTIVITY SHEET 3

Name: .....

Class: .....

Name the following devices.



This is a .....



This is a .....



This is a .....



This is a .....



This is a pair of .....



This is a .....





**UNIT 3: ACTIVITY SHEET 4**

Name: .....

Class: .....

**We can use the mouse to:**

1. Move the cursor across the screen.
2. ....
3. ....

**We can use the keyboard to:**

1. Type a document.
2. ....
3. ....





## UNIT 3: ACTIVITY SHEET 5

Name: .....

Class: .....

1. Write the name of the input device that you will use to:

a) Type a letter using a computer \_\_\_\_\_.

b) Select a picture from the VDU \_\_\_\_\_.

c) Play games \_\_\_\_\_.

d) Scan your picture \_\_\_\_\_.

2. Write the name of the output device you will use to:

a) Print a letter for your friend. \_\_\_\_\_.

b) Show to your teacher a drawing in MS Paint on your computer.  
\_\_\_\_\_.

c) Listen to music \_\_\_\_\_.

