



4

# C<>deBot

Windows 10 with Office 2016

Davinder Singh Minhas

This book belongs to:

Name .....

Class ..... Section ..... Roll No. ....

School .....

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# PREFACE

**Technology** is one of the biggest catalysts in transforming and improving education process while playing a vital role in the progress of a country. As we know, the world is changing at a fast pace and so is the technology. Hence, it is imperative for us to make our students match this pace, and also to help them inculcate futuristic skills and mindset.

To make students ready to face the uncertain challenges and to stay tuned with the unprecedented journey of technology, **National Education Policy 2020** has suggested certain skills that should be learnt by them. These skills will help them in becoming successful, innovative, adaptable, and productive human beings in the various fields such as **Digital Literacy, Coding, Computational Thinking** and **Artificial Intelligence** in the rapidly changing tech-savvy world.

Envisaging the same vision of National Education Policy 2020, we have created **CodeBot**, a comprehensive, exhaustive computer series for classes 1 to 8. This series is based on the latest software packages and operating system such as **Microsoft Office 2016** and **Windows 10**.

This series contains **five** sections:

- **Digital Literacy:** This section would discern students the use of computer technology in day-to-day life. It would also help them comprehend the computer subject as a tool, which can be **integrated** with other subjects.
- **Computational Thinking:** To inculcate the skills of problem-solving among the students, we have introduced Computational Thinking from class 1 to 5. It consists of interesting and engaging activities on Patterns, Decomposition, Abstraction, Algorithm, etc.
- **Coding Junction:** Having children learn coding at an early age helps them organize their thinking and express their ideas to create programs using the computer. It empowers them not only to use technology, but also to create it. Keeping this in mind, we have introduced interactive fun-based coding for all levels such as **Scratch Jr** and **Scratch** from class 2 to 5; **Python** with gamification and GUI-based coding and **MIT App Inventor** from class 6 to 8.
- **Artificial Intelligence (AI):** Knowledge of Artificial intelligence is becoming more and more important as the students have to be AI-ready for the present and future. Therefore, we have introduced AI from class 1 onwards in a fun and engaging manner.
- **Cyber Zone:** This section covers Internet literacy and throws light on issues such as **cybercrimes** and **cyber security**, thereby encouraging students to be good digital citizens.

To produce a visually appealing and easy to understand book, we have artfully combined the latest technologies, pictures, drawings and texts in this series. Most of the topics in this series show a **step-by-step pedagogy** which simplifies the complex computer concepts. The terms and examples described in this series are those which every student will encounter while using computers.

To make the chapters exciting, **topic-relevant projects** have been added that encourage the students to try out for themselves, and to instill in them the confidence before they embark on making their own project using a particular software. Each project in the chapter presents practical problems and their complete solution in an easy-to-understand approach.

In a **Nutshell** section summarizes the whole chapter and the **Self-Evaluation** section examines the students and their understanding of chapter-wise computer concepts. **Exercises** and **Activities** have been included at the end of every chapter to assess the level of understanding of students.

We welcome constructive suggestions and feedback to make this series more comprehensive, relevant, updated and useful both for the teachers and the learners. You may mail us at [editor@pmpublishers.in](mailto:editor@pmpublishers.in).

**AUTHOR**

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## 1

# Computer – Inside the System Unit

**OBJECTIVES**

After completing this chapter, you will be able to:

- Understand about system unit.
- Identify the components inside the system unit.
- Identify the different types of ports in the system unit.

Hi Friends! Have you ever seen inside the box kept near the monitor?  
Let us study what this box contains.



## System Unit

**System unit** is a box-like case that stands near the monitor. Some system units are also placed below the monitor.

System unit is the most important part of a computer system. It protects the internal electronic components from damage. It is also called **computer case**.

The electronic components and most of the storage devices of a computer reside **inside** the system unit.

Other devices, like keyboard, mouse, monitor, printer, speakers, etc. normally occupy space **outside** the system unit.



System Unit

## Components Inside the System Unit

Components inside the system unit include–Motherboard, CPU, Memory, Disk Drives, Power Supply, and Ports.

### MOTHERBOARD

A **motherboard** is a large circuit-board inside the system unit. It is also known as **system board** or **main board**.

It holds many electronic components such as the **processor (CPU)** and **main memory**.

It also provides **connectors** for other external devices like **mouse, keyboard, monitor**, etc.



Motherboard

## CPU

Just like your brain controls each part of your body, the computer also has a brain which controls its each part. That brain of the computer is called **Central Processing Unit (CPU)**.

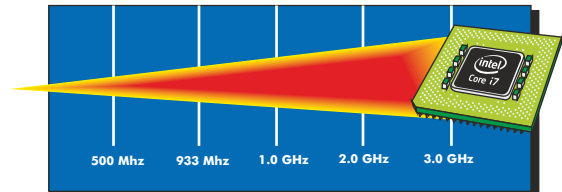
All devices that are connected to the computer first communicate with the CPU in order to carry out a task. CPU is also called **Processor** or **Microprocessor**.



CPU

## Speed of CPU

The speed of CPU is measured in **megahertz (MHz)** or **gigahertz (GHz)**. The faster the speed of the CPU, the faster the computer operates. The speed of CPU is increasing day-by-day.



## MEMORY – RAM and ROM

As we all have memory that helps in remembering things, computer also has a memory which remembers many things by storing data inside it. Memory of the computer is measured in **bits** and **bytes**. Computer memory usually consists of one or more chips such as **RAM** and **ROM** on the motherboard.

## RAM (Random Access Memory)

**RAM** is called the **primary memory** or **main memory** that stores data and instructions temporarily in the computer.

When you start the computer, certain files get loaded from the storage device, called hard disk, into RAM. These files remain in RAM for as long as the computer is running. The program or work you execute on the computer also gets stored in RAM temporarily till the time the computer is running.

RAM is a **volatile** memory. It loses its contents when the power is switched off. For this reason, you must save your work on computer for future use. **Saving** is the process of copying data from RAM to the hard disk.



RAM



### Update Your Knowledge

A **peripheral device** is a device you connect to a computer to expand its capabilities, e.g. keyboard, mouse, microphone, monitor, printer, scanner, external hard drive, webcam, and speakers.



### Update Your Knowledge

If the **processor** is the 'brain' as it controls every device of computer, then the **motherboard** is certainly the 'spine' onto which all other devices are connected.

## ROM (Read Only Memory)

**ROM** is the **Read Only Memory** from which the information can only be read. As the name suggests, the data on ROM chips can only be read but not modified. ROM stores data or instructions that need to be permanent. Its contents are created at the time of manufacturing and cannot be changed. It helps the computer to get started.

ROM is a **non-volatile** memory that means its contents are not lost even when the power is switched off.



ROM

## DISK DRIVES

Disk drives are used for storing data, instructions, and information for future use. Some drives are also used for reading information. **Hard disk drive**, **CD-ROM/DVD drive** and **Blu-ray drive** are the drives fitted inside the system unit.

### Hard Disk Drive

The **hard disk drive** is used to store data and information for future use. Most computers have a hard disk fitted inside the system unit.



Hard Disk Drive



CD-ROM/DVD Drive

### CD-ROM/DVD Drive

A **CD-ROM/DVD drive** reads information stored on compact discs (CDs) and DVDs.

### Blu-ray Drive

A **Blu-ray drive** reads information stored on compact discs (CDs), DVDs, and Blu-ray discs.



Blu-ray Drive

## SMPS (Switched-Mode Power Supply)

**SMPS** is a power supply unit in a computer used to transfer power to it.

It is used to change the voltage as per the requirement of the computer. There is a fan fitted inside the SMPS that keeps the power supply cool.



SMPS

## ADAPTER CARDS

An **adapter card** is a circuit-board that is fitted in a socket on the motherboard. It enhances the functions of various components of the computer. Some popular adapter cards are sound card, video card, modem card, network card, etc.

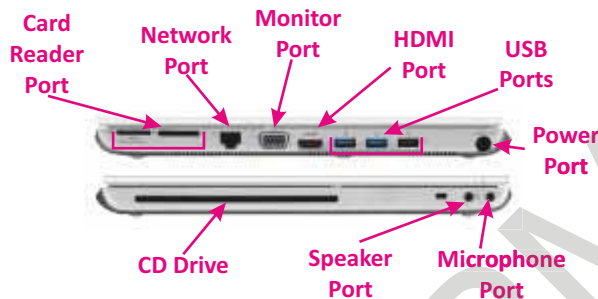
Nowadays, all the latest **motherboards** have enhanced functionality so they do not require adapter cards. Some motherboards may require adapter cards to provide capabilities, such as sound and video.



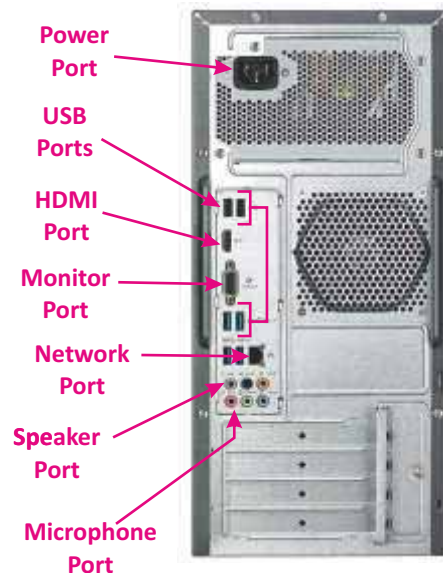
Adapter Card

## PORTS

Ports are a number of holes and slots into which you plug in computer devices like monitor, keyboard, mouse, etc. In a typical **desktop** computer, the back of the system unit contains ports. In a **laptop**, these ports are on the sides.



Ports at the sides of Laptop



Ports at the back of System Unit

## Types of Computer Ports

**USB Port:** Universal serial bus or the USB port connects devices, such as a mouse, keyboard, printer, etc. to a computer.



USB Port



VGA Port



HDMI Port

**Display Port:** Display port connects the monitor to the computer using a cable. These can be of different types, like **Video Graphics Array (VGA)** port and **High Definition Multimedia Interface (HDMI)** port, depending on the requirement.

**Audio Port:** Audio ports help to connect microphone, speakers, or headphones to a computer system.



Microphone Port



Speaker Port



Network Port

**Network Port:** It is used to connect the Internet and network cable to a computer.

**Power Port:** It is used to connect the computer system to the power supply.



Power Port



## In a Nutshell

- System Unit is a box-like case that stands near the monitor.
- CPU is the brain of computer which controls its each part.
- RAM stores data and instructions temporarily in the computer.
- ROM stores data or instructions that need to be permanent.
- Disk drives are used for storing data, instructions, and information for future use.
- SMPS is used to transfer power supply to the computer.
- An adapter card enhances the functionality of computer components.
- Ports are used to plug in computer devices.



## Exercises

### A. Tick [✓] the correct answer.

- ..... protects the internal electronic components from damage.  
a. RAM ☐ b. ALU ☐ c. System Unit ☐
- ..... controls each part of computer.  
a. Motherboard ☐ b. CPU ☐ c. CD-ROM ☐
- Speed of a CPU is measured in .....  
a. MHz ☐ b. GHz ☐ c. Both a. & b. ☐
- ..... is a volatile memory.  
a. Hard Disk ☐ b. RAM ☐ c. ROM ☐
- Fan fitted inside the ..... keeps the power supply cool.  
a. CD-ROM ☐ b. SMPS ☐ c. Ports ☐
- ..... drives are used for holding data and instructions for future use.  
a. ROM ☐ b. CPU ☐ c. Disk ☐

### B. Write 'T' for True and 'F' for False statements.

- Motherboard is also known as system board.
- Memory of the computer is measured in MHz.
- RAM stores the data permanently.
- Hard disk drive reads information stored on CDs/DVDs.
- An adapter card is fitted in a socket on the motherboard.

**C. Fill in the blanks.**

1. A ..... is a large circuit-board inside the system unit.
2. CPU is also called ..... or .....
3. .... is also called the primary memory.
4. An ..... enhances the functionality of components of the computer.
5. .... port is used to connect the Internet and network cable.

**D. Write the full form of the following.**

1. CPU: .....
2. RAM: .....
3. ROM: .....
4. SMPS: .....

**E. Differentiate between the following.**

RAM

ROM

.....	.....
.....	.....
.....	.....

**F. Answer the following questions.**

1. What do you mean by system unit?  
.....  
.....
2. Write any two uses of motherboard in a computer.  
.....  
.....
3. What is the significance of 'speed of CPU'?  
.....  
.....
4. What are the uses of ports? Write down the names of some ports.  
.....  
.....  
.....

**G. Application-based Question**

At home, your younger sister asked you where the computer stores information and other stuff. What should be your reply?

.....

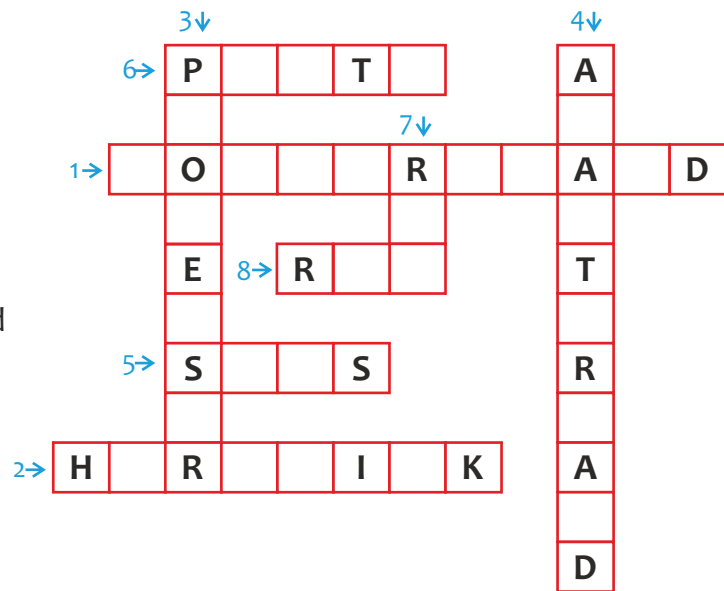


# Activity Section

## Activity Crossword

**Solve the crossword puzzle.**

- Also known as main board
- Used to store data and information
- Also called CPU
- Fitted in a socket on the motherboard
- Power supply unit
- A number of holes and slots
- Also called main memory
- A read-only memory



## Activity Match

**Match the following pictures with their correct names.**



HDMI Port
USB Port
Speaker Port
VGA Port
Power Port
Network Port



## Lab Activity

- With the help of your teacher, open the computer case and observe the different components fitted inside it.
- Then open MS-Word and type the name of components you have seen inside the computer case.
- Save the document as 'Computer Case'.

### Skill Formation

This activity enhances the observation power and typing skills of the students.

## Group Discussion

**Divide the students into two groups and discuss the topic – 'RAM vs ROM'.**

## Online Link

To learn more about inside the system unit of computer, visit the website:  
<https://sites.google.com/site/computersavvy92/home/inside-the-system-unit>

# 2

## Windows – Customizing and Personalizing

### OBJECTIVES

After completing this chapter, you will be able to:

- Understand about Windows 10 and starting it.
- Learn how to switch between running apps.
- Organize running programs into two or more desktops.
- Lock and unlock your computer.
- Understand the use of Settings app to customize tasks.



Hello Friends! In your previous class, you learnt about Windows 10, a GUI-based operating system. In this class, you will learn more about it.

## Windows 10

Windows 10 is the most popularly used **Operating System (OS)** developed by **Microsoft Corporation**.



# Windows 10

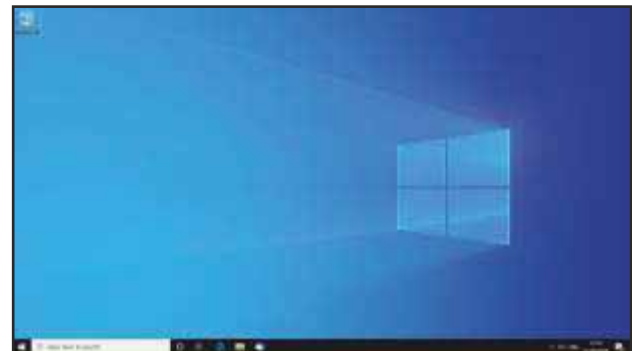
Windows 10 controls the overall activities of the computer as well as the operation of each and every part of it. Windows recognizes **input** from an input device such as keyboard, mouse, etc.; coordinates the display of **output** on the monitor; instructs a printer how and when to print information; and manages data and instructions in memory, and information stored on a disk.

One of the basic functions of Windows 10 is to start or restart the computer. This process of starting and restarting a computer is known as **booting**.

## STARTING WINDOWS 10

When you turn on your computer, Windows 10 starts automatically and you see a Windows 10 **lock screen**. Press the **Enter** key from the keyboard.

The **Windows sign in** screen appears. You may be asked to enter the **password**. After entering the password, you will get a screen as shown on the right. This screen is known as **desktop**.



Windows Desktop

# START MENU AND DESKTOP

## Apps List

There are many apps installed on the computer. Scroll the list to see all of them.

## User Icon

Click this icon for a menu with options to log out or view your account.

## Documents

## Pictures

## Settings

## Power



## Edit the titles

Tiles are organized into groups with titles at the top. Click on the title to change it.

## Drag and drop

Click and drag the title bar of a group of tiles to move it elsewhere.

## Tile options

Right-click a tile for a menu with options to change its size.

## Expand the menu

Click and drag the right-hand edge of the Start menu to change the size.

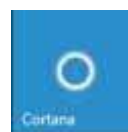
# A GUIDE TO SOME COMMON START MENU APPS



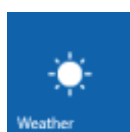
**Mail:** It is an email app that can be used with Microsoft, Google and other e-mail accounts.



**Maps:** Explore the world with 3D cities and driving directions with the route planner in the Maps app.



**Cortana:** The app tile is an alternative way to access Cortana. Click it and Cortana is ready to answer your questions.



**Weather:** It is used to get an accurate forecast of your local area or any place in the world.



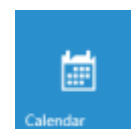
**Groove Music:** This is a music player app that plays your music or Microsoft streaming music service.



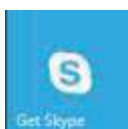
**Microsoft Edge:** It is a new cross-platform web browser.



**Films & TV:** Movies or TV shows bought in the Store appear in this app. Use it to watch your purchases.



**Calendar:** This app is used to look at updates, create appointments, and set reminders so you never miss them.



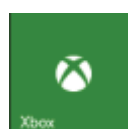
**Skype:** It enables you to send text messages and photos and also make voice and video calls.



**Photos:** Browse, view, and edit your digital camera or phone photos stored on the computer.



**Store:** It has everything you need, including software, music, movies, and TV.

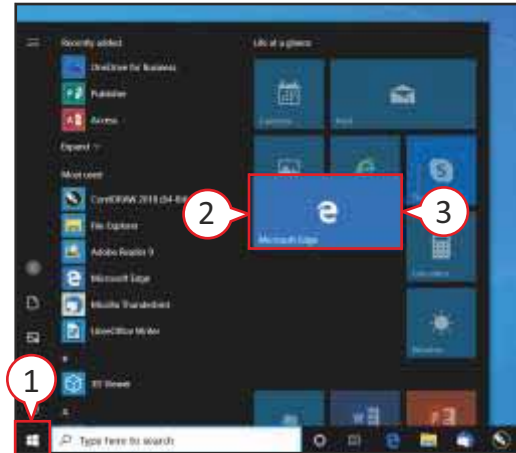


**Xbox:** This is for gamers who play on Xbox. It keeps you in touch with the gaming community.

# CONFIGURING THE START MENU

You can customize the Start menu according to the way you want. You can also rearrange and resize the tiles of Start menu.

## Moving a tile



1. Click on **Start** icon (or press )

The **Start menu** appears.

2. Click and hold the tile you want to move.
3. **Drag** it to the position you want.

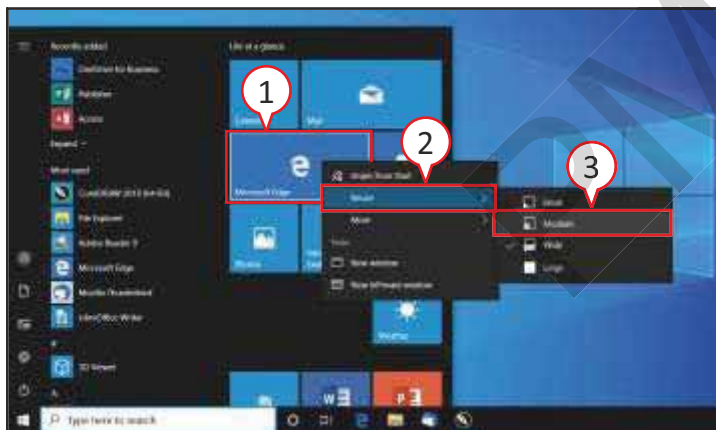
*Windows fades the tiles slightly and adds extra space between the tiles.*

4. Release the tile.

Windows 10 moves the tile to the new position.

## Resizing the tile

Windows 10 resizes the tiles in four available sizes.



1. In the Start menu, right-click the tile you want to resize.

A **context menu** appears.

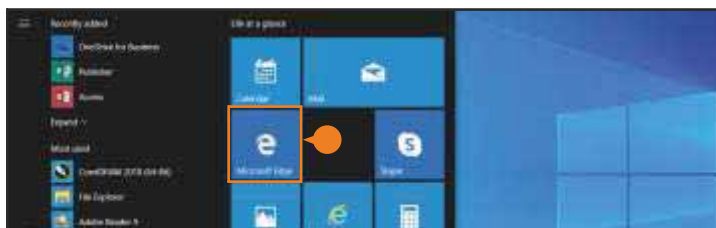
2. Click on **Resize**.

Another context menu appears.

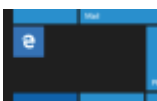
3. Click on the size you want.

In this example, we have chosen **Medium** size.

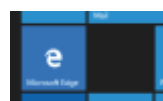
- Windows resizes the tile.



Windows 10 resizes the tiles in four sizes (small, medium, wide, and large).



This is an example of the **Small** size.



This is an example of the **Medium** size.



This is an example of the **Wide** size.



This is an example of the **Large** size.



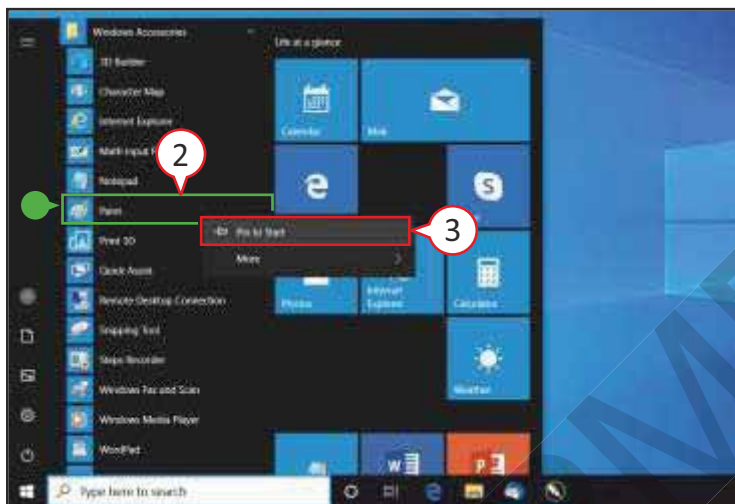
## ADDING OR PINNING AN APP TO THE START MENU

You can customize the Start menu to quickly access the programs that you use most often. Some apps are not displayed as a tile on the right side of Start menu; you have to open them from **Start menu** list on the left and then navigate through the menu and sub-menu that appears. You can add a frequently used app permanently to the right side of Start menu.



1. Click on **Start** icon to open Start menu (or press **Windows** key).

A list of all applications appears on the left.



- Locate the app you want to pin in Start menu.

2. Right-click the app.  
App shortcut menu appears.
3. Click on **Pin to Start**.



- A **tile** for the pinned app appears on the right side of the Start menu.

To remove the tile from the Start menu, right-click the tile and then click on **Unpin from Start**.



### Add or Pin an App to Taskbar

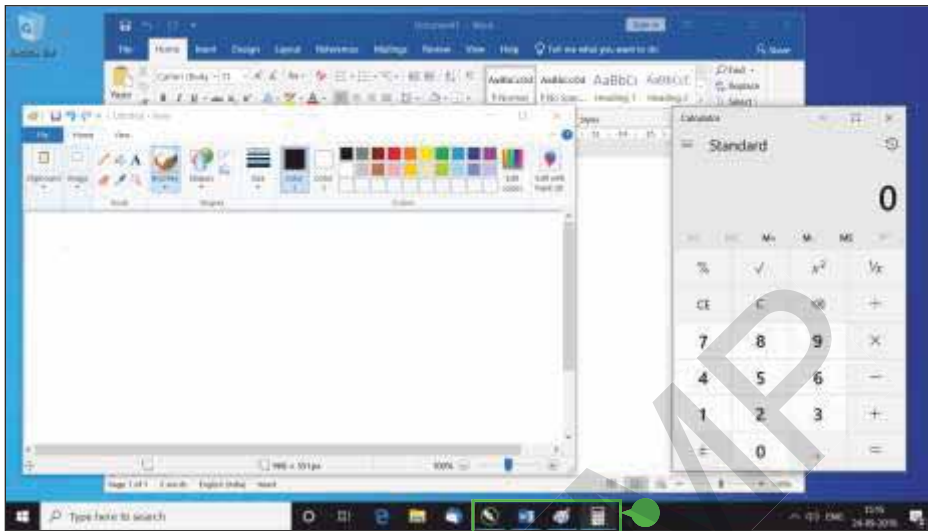
Pinning an app to the Start menu is helpful only if you use the Start menu regularly. If you use the desktop more often and you have an app that you use frequently, you might prefer to have that app just a single click away. You can achieve this by pinning the app to the taskbar.

To pin an app in the taskbar, repeat steps 1 to 3 from **Add or pin an App in the Start menu** section but in step 3, click on **More** and then click on **Pin to taskbar**. An icon for the app now appears in the taskbar.

# Switching Between Running Apps

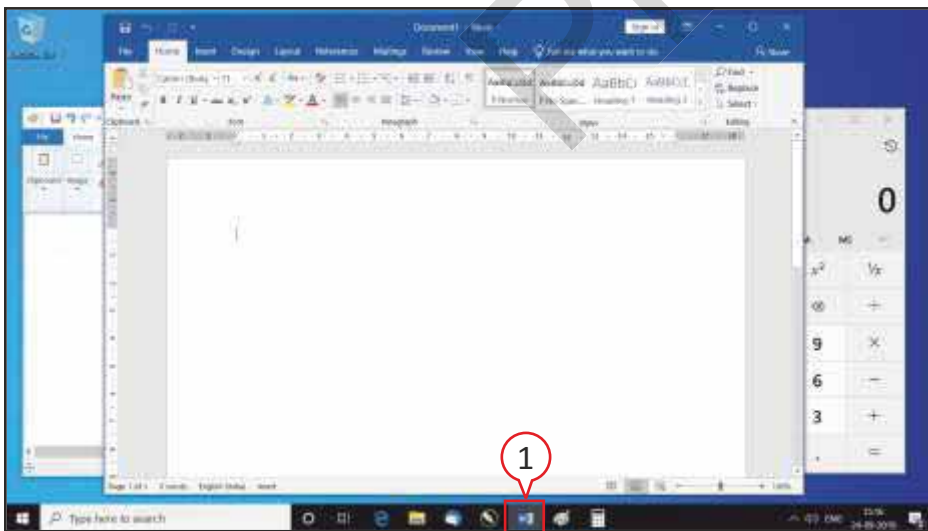
In Windows, after you start one app, you do not need to close that app before you open another one. Windows supports a feature called **multitasking**, which means running two or more apps side by side. If you need to work with more than one opened app together, you can easily switch between the running apps using either the **taskbar** or the **Task View**.

## SWITCHING APP USING TASKBAR



You can work only in one app at a time. The **active app** appears in front of all the other apps.

- The **taskbar** displays a button for each opened app on your screen.



1. To display the app you want to work with, in front of all other apps, click on its icon on the taskbar.

You can also press **Alt + Tab** keys to select the app.

The app appears in front of all the other apps.



### Do You Know?

You can also display the app in front of all running apps by clicking anywhere inside the app.



### Virtual Desktops

Windows 10 has made **virtual desktops**, previously only available with third-party software; it is a feature that everyone can use. With a key press, you can easily create new desktops or switch between existing ones.



## SWITCHING APP USING TASK VIEW

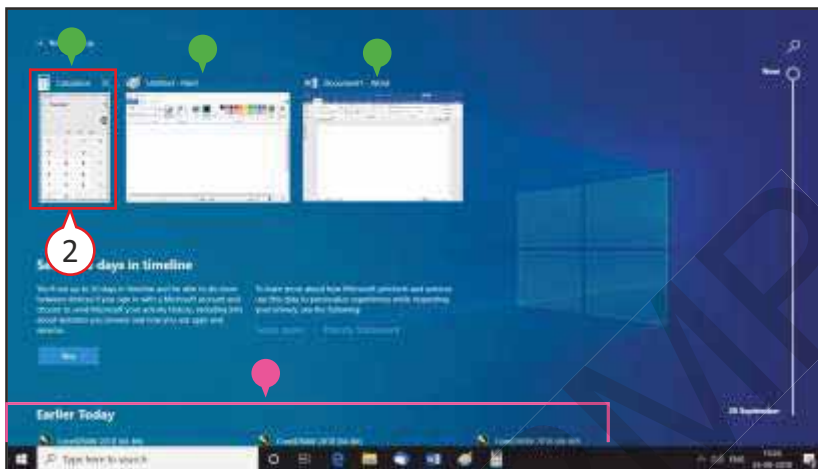


1. In the **taskbar**, click on **Task View** icon.

- Windows displays the thumbnails of all running apps.
2. Click on the thumbnail of the app you want to switch to.

Windows switches to the clicked app.

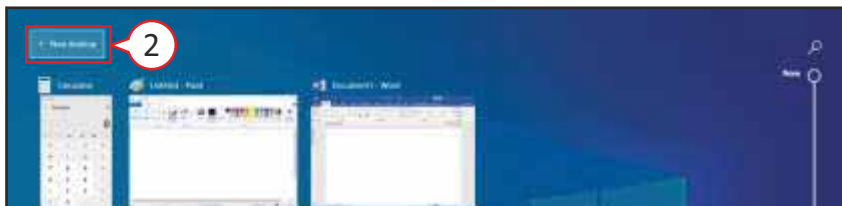
- Task View also shows activity history which keeps track of the things you do on your device, such as the apps and services you use, the files you open and the websites you browse.



## Multiple Desktops

You can make your computer screen manageable by organizing your running programs into two or more desktops. Each desktop includes only the windows of the programs that you have assigned to that desktop.

### ADD A NEW DESKTOP



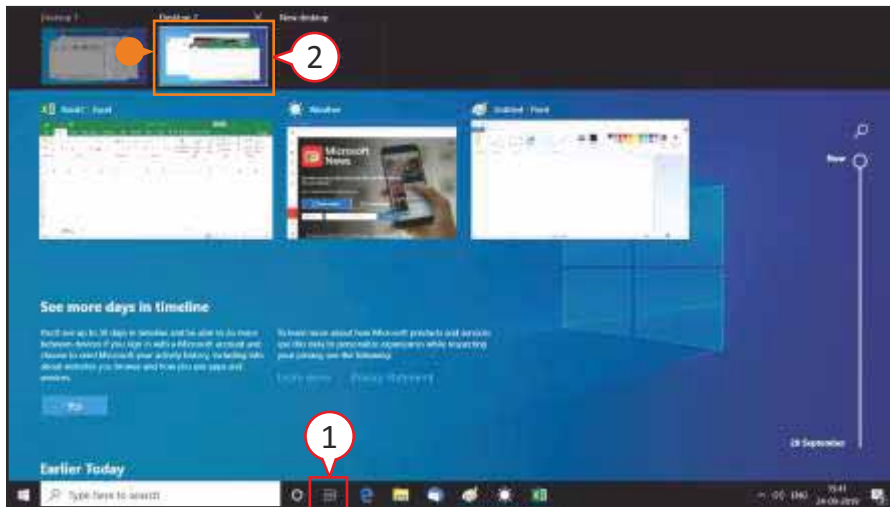
1. In the taskbar, click on **Task View** icon (not shown).
2. Click on **New desktop**.

- Windows creates a new desktop.

Your original desktop is shown as **Desktop 1**.



## SWITCH TO ANOTHER DESKTOP





1. In the taskbar, click on **Task View** icon.
- Position the mouse pointer over the other desktop to see the programs running within that desktop.
2. Click the desktop you want to use.

Windows switches to that desktop and displays its running programs. Any new programs you launch now appears only in the selected desktop.

## Locking Your Computer

Whenever you leave your computer desk, you can lock your computer to ensure its security. Once your computer is locked, anyone who tries to use your computer will first have to enter the password. When you return to your computer, you can unlock your computer by typing the password of your account.



1. Click on the **Start** icon (or press )  
The start menu appears.
2. Click on **User** icon.  
A menu appears.
3. Click on **Lock** (or press +L).



Windows 10 locks your computer and displays the Lock screen.

Now, you can unlock your computer by typing the correct password of your account.



### Update Your Knowledge

Each desktop includes only the windows of the programs that you have assigned to it. For example, you might have a **productivity desktop** that includes a word processor, a spreadsheet and Microsoft Edge for research; a **social desktop** that includes Mail, People and Calendar; and a **multimedia desktop** that includes Music, Photos and Videos. You can quickly switch from one desktop to another.

# Settings App

**Settings** is the Windows app that you use for customizing and configuring many aspects of your Windows system. Many of the customizing tasks are performed using this app.

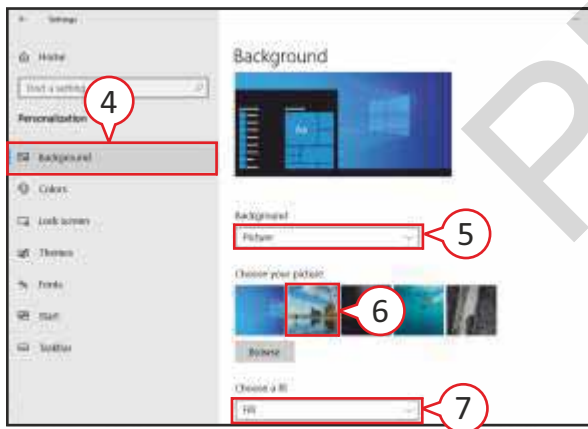
## CHANGING DESKTOP BACKGROUND

You can make your desktop background more beautiful by changing its background image. The background image that appears on your desktop is called **wallpaper**. You can even use your own picture or other pictures provided by Windows as wallpaper in your computer.

1. Click on **Start** icon (or press **Windows**). The Start menu appears.
2. Click on **Settings** (or press **Windows+I**). **Windows Settings** app appears.

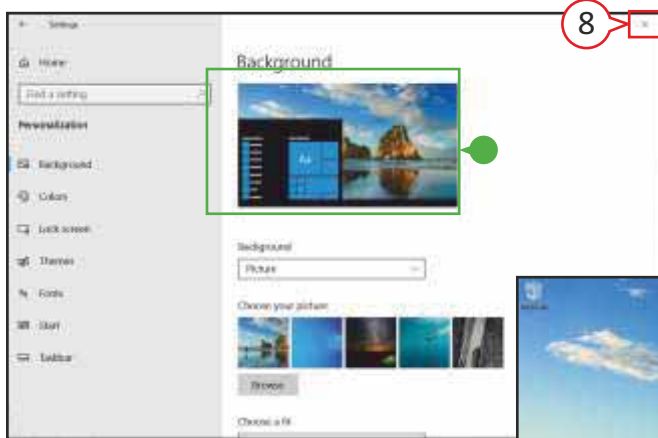


3. Click on **Personalization**. **Personalization settings** appear.



4. Click on **Background**.
5. Click on the down arrow of **Background** and select **Picture**.
6. Click on the picture you want to use. You can also click on **Browse** to use your own picture.
7. Click on the down arrow of **Choose a fit** and then click on one of the following positionings:

- **Fill:** It displays a single copy of the image extended on all sides and keeps the ratio of width to height the same.
- **Fit:** It displays a single copy of the image extended until the width of the picture fits width of the screen or the height of the picture fits height of screen.
- **Stretch:** It displays a single copy of the image extended on all sides to fill the entire desktop.
- **Tile:** It displays multiple copies of the same image in tiles format so they fill the entire desktop.
- **Center:** It displays a single copy of the image in the center of the screen.



- The preview of the selected picture appears here.

8. Click on **Close [x]** button.

*In this example, we have chosen 'Fill' positioning in Step 7.*

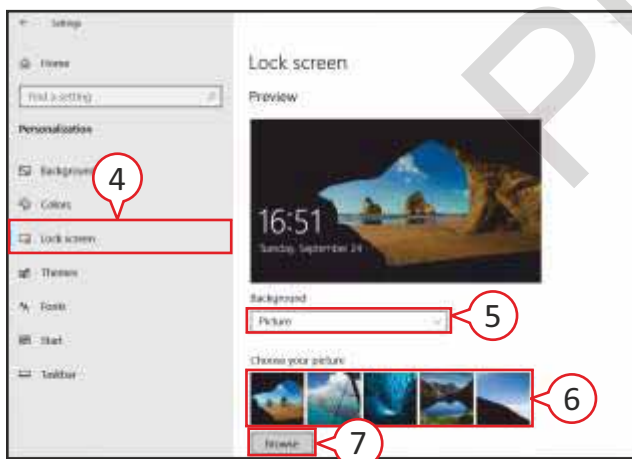


New Windows desktop appears.

## CHANGING LOCK SCREEN BACKGROUND

If you lock your screen frequently, you can change its background to some different background other than the default image.

1. Click on **Start** icon to open Start menu (or press **Windows** key).
2. Click on **Settings** (or press **Windows** + **I**). **Settings** app appears.
3. Click on **Personalization**. Personalization settings appear.

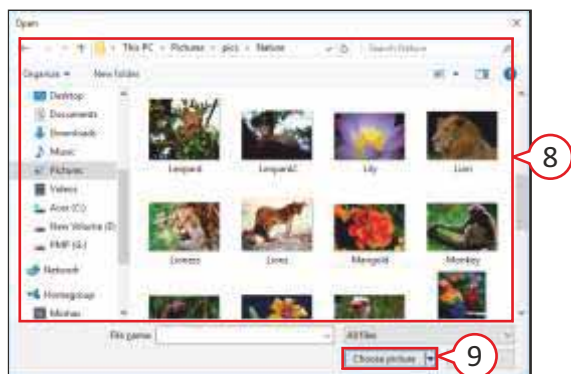


4. Click on **Lock screen**.
5. Click the drop-down arrow of **Background** and click on **Picture**.

6. Click on the picture that you want to use.

*The image appears the next time you lock your computer.*

7. To use one of your own pictures, click on **Browse**.



**Open** box appears.

8. Navigate the picture that you want to use from your computer.

9. Click on **Choose picture**.

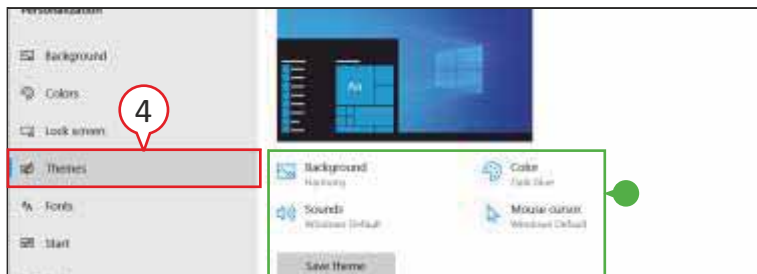
*The image appears the next time you lock your computer.*



## SETTING A THEME

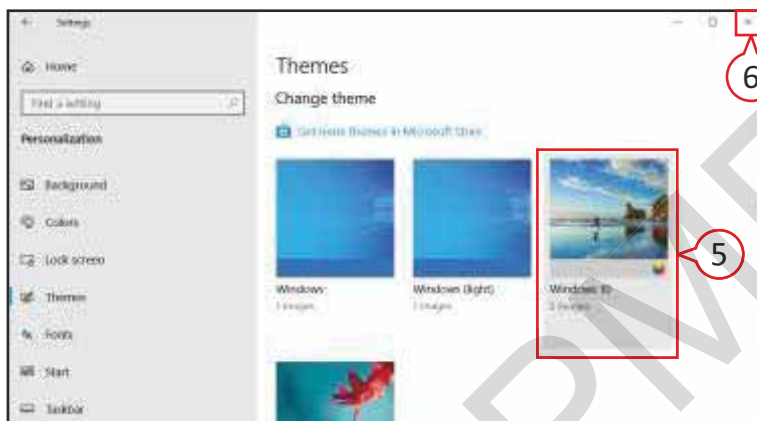
Instead of setting the desktop background and color scheme individually, you can change all of these at once by applying a **theme**. Each theme includes its own set of desktop icons, sound effects, and mouse pointers.

1. Click on **Start** icon to open Start menu (or press **Windows** key).
2. Click on **Settings** (or press **Windows** key + **I**). **Settings** app appears.
3. Click on **Personalization**. Personalization settings appear.



4. Click on **Themes**.

- You can click on any of these buttons to create your custom theme and then save it.



5. Scroll down and click on the theme you want to use.

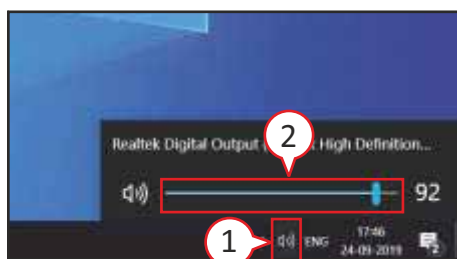
*Windows 10 applies the theme automatically.*

You can see the immediate effect on the desktop.

6. Click on **Close** [x] (or press **Alt+F4**).

## Adjusting the Volume

If you are listening to an audio or watching a video file, you can adjust the volume up or down to set its audio just right.



1. In the taskbar, click on **Volume** icon.

The Volume slider appears.

2. Click and drag the slider to set the volume level that you want.

Windows sets the system volume to the new level.



### Do You Know?

There are two themes in Windows 10 — Dark and Light. Light theme gives Windows a clean look and feel whereas Dark theme is used to give dark contrast with low light to the desktop.



### Update Your Knowledge

You can download more themes by clicking on 'Get more themes online'.

## In a Nutshell

- We can rearrange and resize the tiles of Start menu.
- We can add a frequently used app permanently to the right side of Start menu.
- Windows supports multitasking which means running two or more apps, side by side.
- Each desktop includes only the windows of the programs that we have assigned to that desktop.
- Many of the customizing tasks are performed using the Settings app.
- Wallpaper is the background image that appears on the desktop.
- Each theme includes its own set of desktop icons, sound effects and mouse pointers.



## Exercises

### A. Tick [✓] the correct answer.

1. The operating system developed by Microsoft Corporation is ..... .  
 a. Windows ☐    b. Ubuntu ☐    c. Mac OS ☐
2. The final screen of Windows is known as ..... .  
 a. taskbar ☐    b. pointer ☐    c. desktop ☐
3. Windows 10 resizes the tiles in ..... sizes.  
 a. four ☐    b. five ☐    c. six ☐
4. .... option can add an app permanently on the Start menu.  
 a. Pin to Start ☐    b. Pin to Taskbar ☐    c. Pin to Desktop ☐
5. .... screen prevents others from accessing your computer.  
 a. Desktop ☐    b. Lock ☐    c. Dark ☐

### B. Write 'T' for True and 'F' for False statements.

1. Booting is the process of starting and restarting a computer.
2. Tiles are organised into groups with titles at the top.
3. We can pin the app to the Start menu, which we use frequently.
4. We cannot switch between the running apps.
5. We cannot change the background of the desktop.
6. We can adjust the volume of audio in the computer.



**C. Fill in the blanks.**

1. Windows ..... screen appears after entering the password.
2. You can customize the ..... menu according to the way you want.
3. .... or the Task View is used to switch between the running apps.
4. You can lock your computer to ensure its .....
5. .... option displays multiple copies of the same image in tiles format.

**D. Define the following.**

1. Multitasking: .....
2. Wallpaper: .....

**E. Answer the following questions.**

1. What are the features of Windows 10?  
.....  
.....  
.....
2. How do we open an app that is not displayed as tile?  
.....  
.....
3. Name the ways to switch between different running apps.  
.....  
.....
4. Name the different ways to set positioning of wallpaper on desktop.  
.....  
.....
5. What is the advantage of using or changing a theme?  
.....  
.....  
.....

**F. Application-based Question**

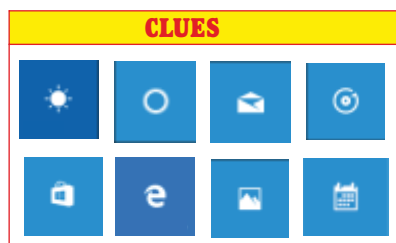
While making a project in Word, Rahul needs to open an app frequently. He always uses some steps to open the app, which is time-consuming. Tell him the easy way to open the app.

.....

# Activity Section

## Activity Mark

Mark the names of apps by looking at the clues. One has been done for you.



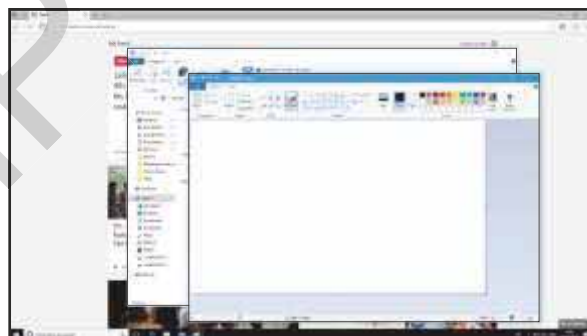
A	W	C	E	N	T	E	R	T	A	I	N	M	E	N
R	E	I	C	O	R	T	A	N	A	T	I	O	N	H
Q	A	O	F	F	I	C	E	X	Y	P	S	S	G	K
J	T	L	G	R	O	O	V	E	M	U	S	I	C	P
F	H	A	I	R	P	O	R	T	P	U	O	H	D	H
L	E	H	I	M	A	I	L	Q	E	N	M	O	G	O
N	R	K	T	S	J	U	J	S	T	O	R	E	H	T
M	M	C	A	L	E	N	D	A	R	O	X	L	K	O
M	I	C	R	O	S	O	F	T	E	D	G	E	Z	S

## Lab Activity

Open Windows and work with multiple apps by using the following steps:

### Part A: Running Microsoft Edge, the File Explorer and Paint

1. Open the desktop screen, click on the **Microsoft Edge** app icon on the taskbar to run it.
2. Click on **File Explorer** on the taskbar to open the File Explorer window.
3. Type **Paint** in the search box and then click the **Paint** desktop app search result to run the Paint app.



### Part B: Switching among the Windows

1. Press **Alt+Tab** to switch to the next opened window.
2. Press **Ctrl+Alt+Tab** to view the programs that are running. Press the **Tab** key. Click the Paint live preview to switch to the Paint app.
3. Click the **Task View** icon on the taskbar to view all the programs that are running. Click on the Microsoft Edge live preview to switch it.

#### Skill Formation

- This multi-directional activity enhances the spatial intelligence in the students.

## Group Discussion

Divide the students into two groups and discuss the topic – 'Common Start Menu Apps'.

## Online Link

To learn more about customizing and personalizing Windows, visit the website:

<https://www.windowscentral.com/how-customize-look-and-feel-windows-10>

# 3

## Word – Editing and Formatting

### OBJECTIVES

After completing this chapter, you will be able to:

- Edit and delete text in Word document.
- Format text to change its appearance.
- Insert pictures and WordArt in a document.
- Print a hard copy of document.



Hello Friends! In the previous class, you learnt about Word and how to create a document. Now, we will practice the editing and formatting features in Word.

## Word

**Microsoft Word** or **Word** is one of the most popular word processing programs, which is used for creating, formatting, editing and saving a document. It also provides different features such as Inserting and Deleting Text, Spelling and Grammar, Thesaurus, Find and Replace, Bullets and Numbering, Inserting images, etc.

## Project: Our Country

### OUR COUNTRY - INDIA

India is the seventh largest country in the world. It is a country of lovely landscape and lovely people. There are some countries which are the direct neighbours of India. We share our boundary with them.

Afghanistan and Pakistan lie to the North West; Bhutan and China lie to the North; Bangladesh and Myanmar to the East; and Sri Lanka and Maldives to the South.

### National Symbols of India

- Peacock – National Bird
- Tiger – National Animal
- Lotus – National Flower
- Mango – National Fruit
- Banyan – National Tree
- The Lion Capital – National Emblem



Start

### Subject Integration

#### Social Studies

This integration would make students understand about India's neighbours and national symbols. ....

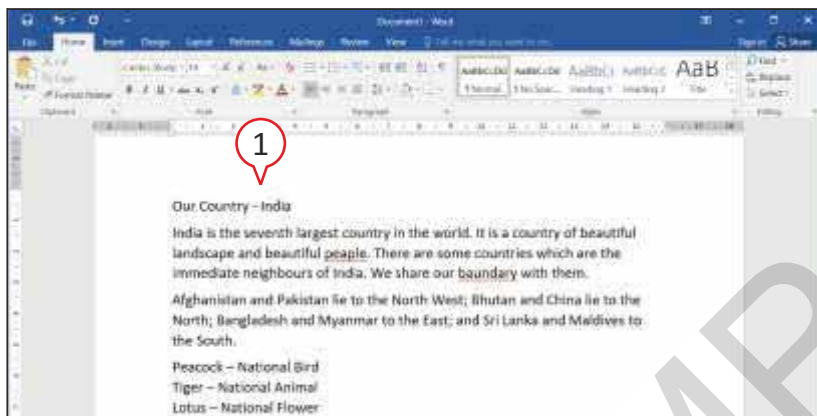
This project deals with the creation of a document, editing and formatting it. Now, let us create the project by using various features of Word.

## ENTERING TEXT

You already know how to start a new document and enter text in Word. Now, with the help of a keyboard, you will enter text into a new document to create the project.



- The text you type appears where the **insertion point** flashes on your screen.



1. Type the text for your document by pressing the keys on the keyboard.

*The text appears to the left of the insertion point as you type.*

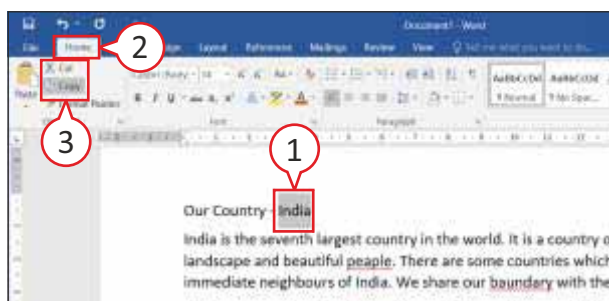
*To add more than one space between words, use **Tab** key rather than using **Spacebar** key.*

Some words are underlined with red and blue colors because Word automatically underlines misspelled words in red and grammatical errors in blue.

## Editing Text

### MOVING AND COPYING

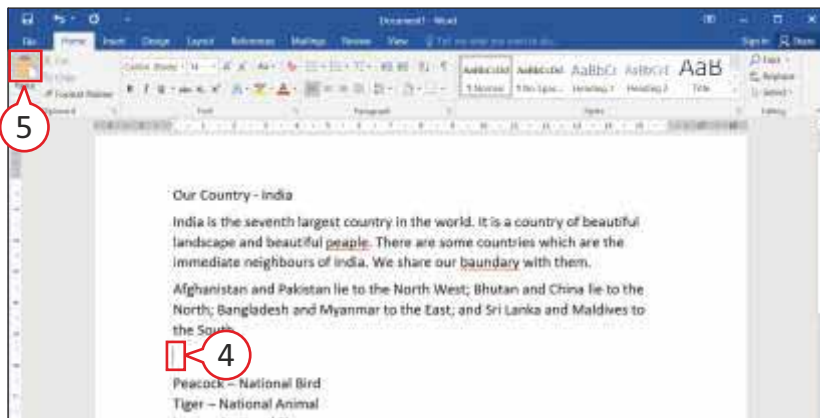
The text in a document can be moved (cut) or copied from one location to another within a document or between the documents. **Moving (cutting)** a text means the text disappears from its original location and appears at another location where it is pasted. **Copying** a text means the text remains at its original place and also appears at the place where it is pasted.




1. Select the text you want to move or copy.
2. Click on **Home** tab.
3. Click on one of the following buttons:
  - **Cut/Move** (✂) (or press Ctrl+X)
  - **Copy** (📄) (or press Ctrl+C)

In this example, we have chosen **Copy**, so the text will remain in its original location too.





- Click on the location where you want to place the text.
- Click on **Paste** button (  ) to place the text in the new location (or press **Ctrl+V**).

The text appears in the new location.

## INSERTING TEXT IN DOCUMENT

You may often find it necessary to add some text while typing or after typing a document. You can easily add or insert new text in your document at any time.



- Click on the location in your document where you want to insert new text.

Insertion point appears.

The text you type appears where the insertion point flashes on the screen.



- Type the text you want to insert.

To insert a blank space, press the **Spacebar** key on the keyboard.

The words to the right of the new text move forward.

## DELETING TEXT IN DOCUMENT

You can remove or delete the text that is no longer needed.



- Select the text you want to delete.
- Press the **Delete** key from keyboard to remove the text.

The text disappears.

## UNDO FEATURE

The **Undo** feature, on the **Quick Access Toolbar**, is used to reverse the actions you take while working in a document. This feature is useful when you, by mistake, delete text and want to recover it. You can also press **Ctrl+Z** keys to undo an action.

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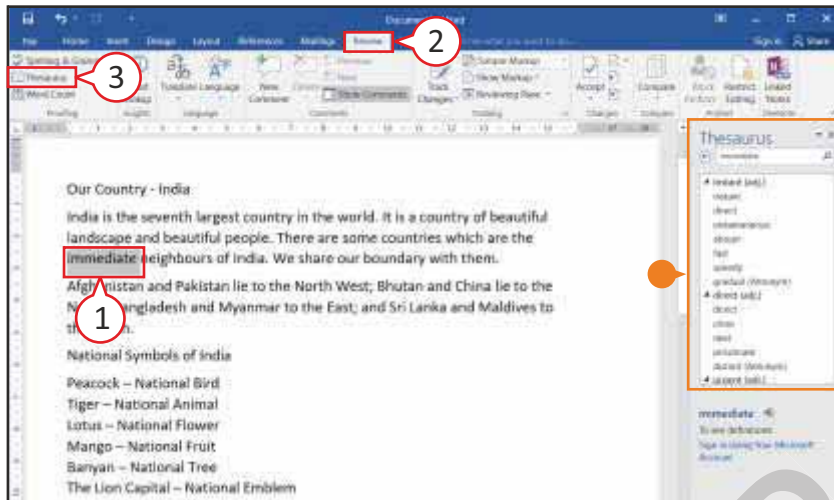
- 28



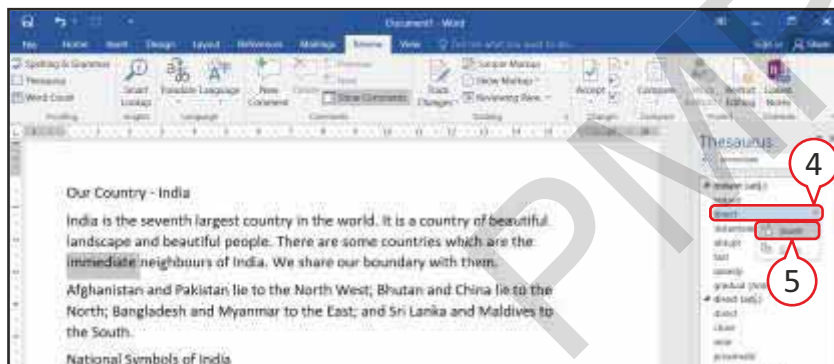
## USING THESAURUS

Thesaurus is a list of words grouped together containing **synonyms** and **antonyms**. Word provides a thesaurus through which you can find words to express your meanings more accurately.

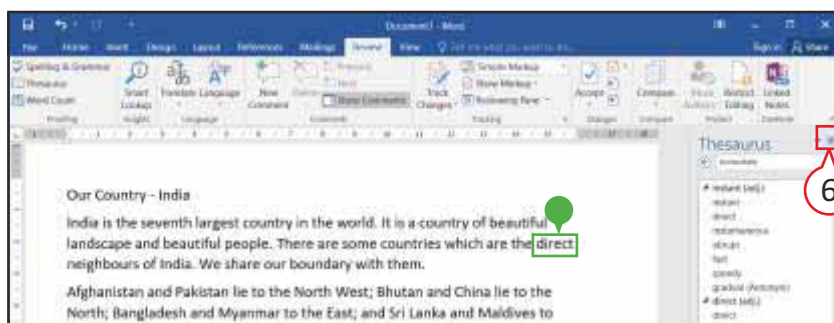
The Thesaurus can be used to replace a word with one of its synonyms.



1. Select the word for which you want thesaurus.
2. Click on the **Review** tab.
3. Click on the **Thesaurus** button (or press **Shift+F7**).
  - The **Thesaurus** task pane opens and displays the selected word on the top, and suggested replacements for that word below.



4. Click on the down arrow and select the suitable word.
  5. Click on **Insert**.
- A pop-up menu appears.



- The word from the Thesaurus replaces the selected word in the document.
6. Click on **Close** button to close the Thesaurus pane.



### Update Your Knowledge

When a word you type does not appear in the dictionary, **Word** underlines the word as misspelled. The word might be a term that you use regularly. If that is so, click **Add to Dictionary** so that Word stops underlining the word as a misspelling.



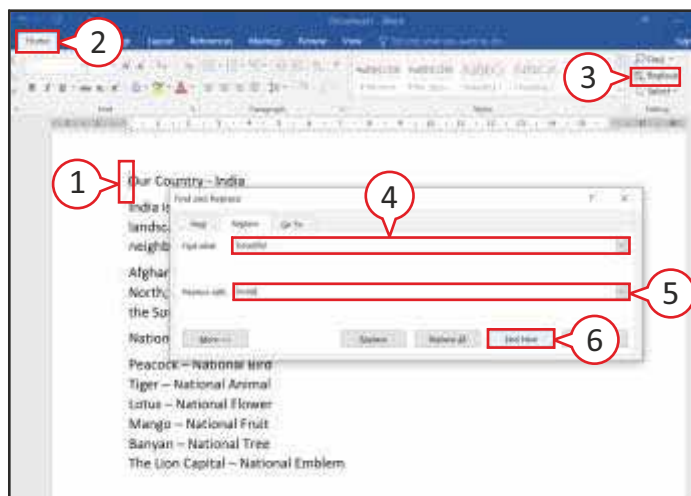
### Do You Know?

By pressing the **Insert** key from keyboard for **Overtyping** mode, Word replaces existing text to the right of the insertion point, character to character.

## FINDING AND REPLACING TEXT

In your document, sometimes you need to change the word or text with some other word or text. This is useful if you have frequently misspelled a word. The **Find** command is used to search for a particular word or text, and **Replace** command replaces the selected text or word with the new text.

1. Click at the beginning of your document.



2. Click on **Home** tab.

3. Click on **Replace** (or press **Ctrl+H**).

The **Find and Replace** dialog box appears.

4. Type the text you want to find.

5. Click on this area and type the text you want to use, in place of the text you typed in step 4.

6. Click on **Find Next** to start search.

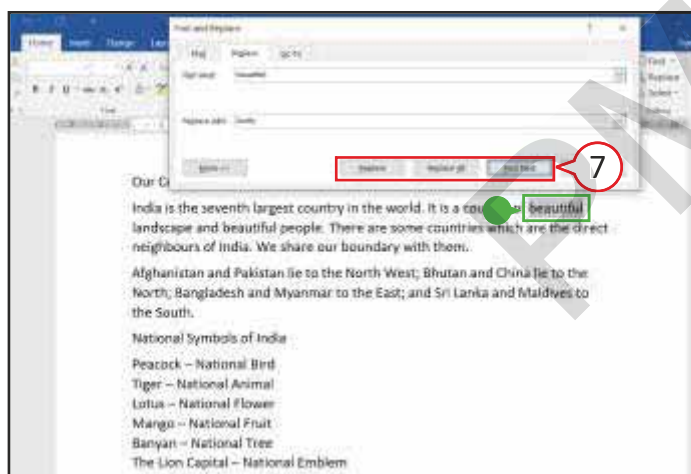
Word highlights the first matching word it finds.

7. Click one of the following options:

**Replace** - To replace the word

**Replace All** - To replace the word and all other matching words in the document

**Find Next** - To ignore the word

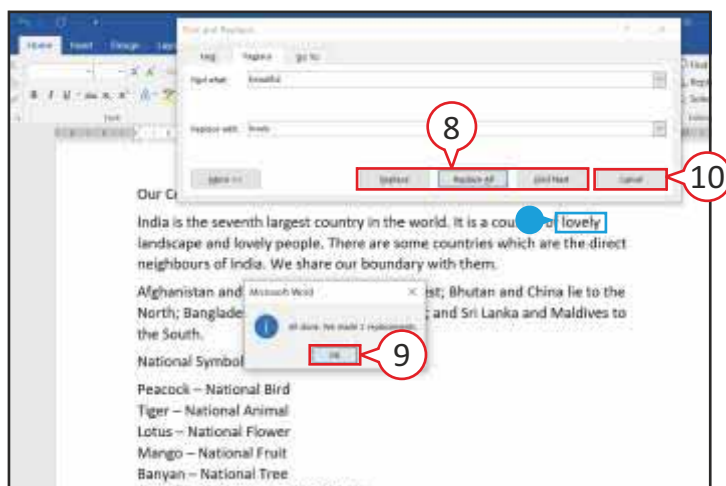


The word gets replaced.

8. Replace or ignore the matching words until a dialog box appears, informing you that the search is complete.

9. Click on **OK** to close the dialog box.

10. Click on **Cancel** to close the **Find and Replace** dialog box.



# Formatting Text

You can change the appearance of text to make it stand out or in a proper format.

## CHANGING TEXT CASE

Sometimes in a document, you may need to change the case of the text, i.e. the text you have written in small letters should have been written in capital letters (uppercase) or vice versa. You can do this without retyping the text by using CHANGE CASE option. There are five case options offered by Word.

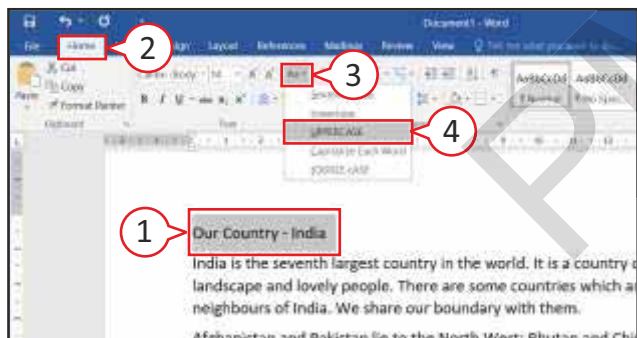
**Sentence case:** The first character in the sentence will be in uppercase and the rest will be in lowercase.

**lowercase:** All characters will be in lowercase (small letters).

**UPPERCASE:** All characters will be in uppercase (capital letters).

**Capitalize Each Word:** First character of each word will be capital, and the rest will be small.

**tOGGLE cASE:** It will reverse the case of letters or selected text.



1. Select the text that you want to change to a new case style.
2. Click on **Home** tab.
3. Click on **Change Case** [Aa] button. The **Change Case** menu appears.
4. Select the case style you want to use.

- The text you selected changes to the new case style.

In this example, we have used uppercase style.

*To deselect the text, click anywhere outside the selected area.*



### Update Your Knowledge

- Press **Alt + R + S** keys to check the spelling and grammar of text in the document.
- Press **Alt + F7** keys to find the next spelling or grammatical error.
- Press **F7** key to choose the spelling command.



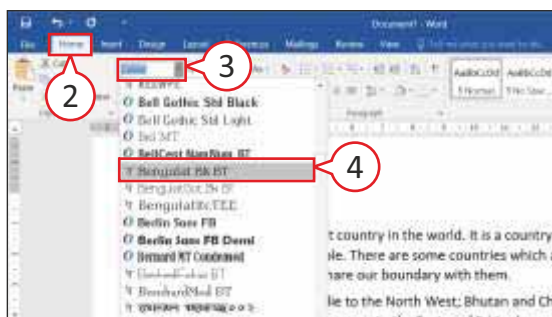
### Update Your Knowledge

- You can press **Shift + F7** keys to use Thesaurus.
- You can press **Alt + R + E** keys to suggest other words with similar meaning to the word you have selected.



## CHANGING FONT OF THE TEXT

You can change the font of text to enhance the appearance of the document.



1. Select the text you want to change to a different font (not shown).
2. Click on **Home** tab.
3. Click on the down arrow of **Font**.
4. Click on the font you want to use.

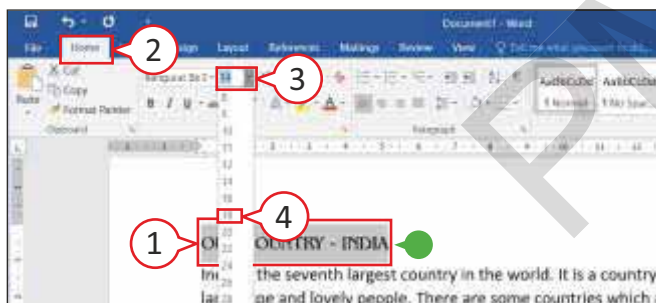
- The text you selected changes to the new font.

In this example, we have used **Benguiat BK BT** font.

To deselect text, click outside the selected area.

## CHANGING FONT SIZE OF TEXT

Font size controls the size of the font, generally measured in **points**. You can increase or decrease the size of the text in your document.

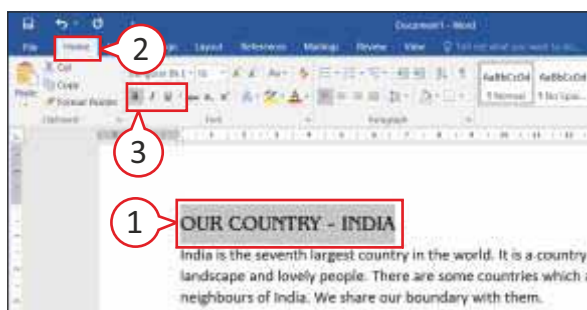


1. Select the text you want to change to a different font.
2. Click on **Home** tab.
3. Click on the down arrow of **Font size**.
4. Click on the size you want to use.

- The text you selected changes in the new size.

## MAKING THE TEXT BOLD, ITALIC OR UNDERLINE

You can make your text bold, italic or underlined to emphasize information in your document.



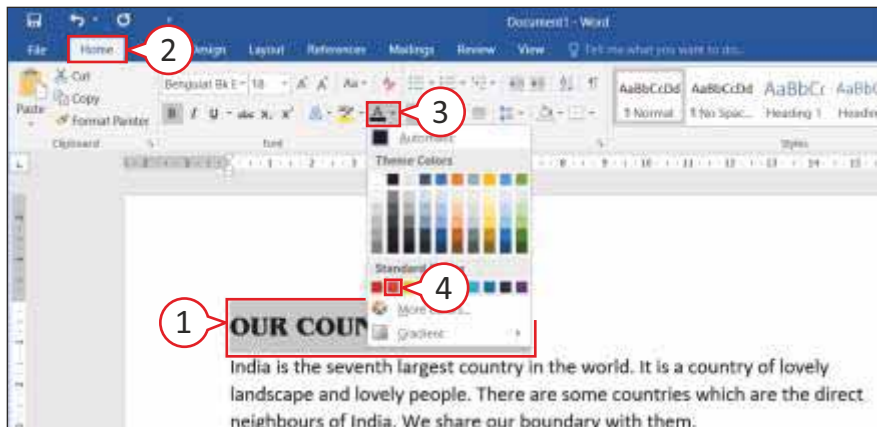
1. Select the text.
2. Click on **Home** tab.
3. Click on one of the following buttons:
  - ( **B** ) **Bold** (or press Ctrl+B)
  - ( *I* ) *Italic* (or press Ctrl+I)
  - ( U ) Underline (or press Ctrl+U)

The text you selected appears in the new style. This example applies **Bold** style to the selected text. To remove the bold, italic or underline style, repeat steps 1 to 3.



## CHANGING THE COLOR OF TEXT

Color of the text can be changed to draw attention towards headings or important information in your document.

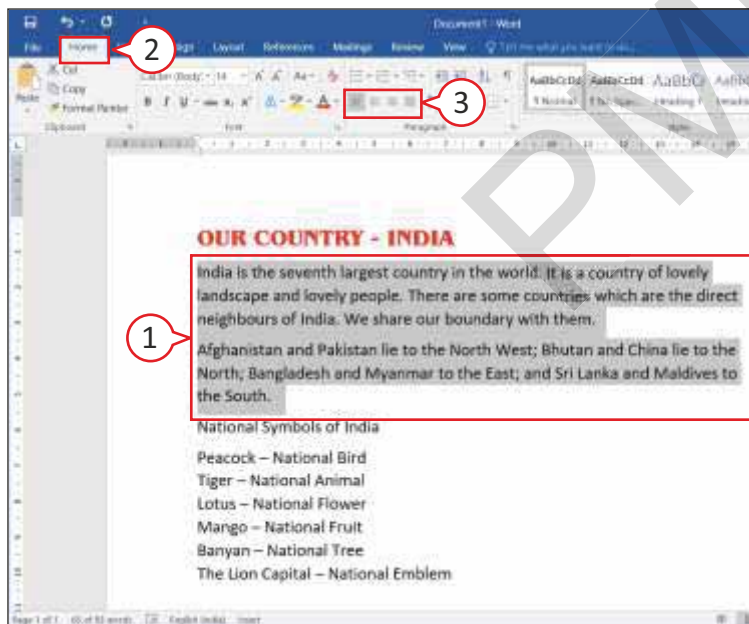


1. Select the text you want to format.
  2. Click on **Home** tab.
  3. Click on the down arrow of **Font color**.
  4. Click on a color.
- Word applies color to the text.

In this example, we have applied **red color** to the text.

## CHANGING ALIGNMENT OF TEXT

You can align text in different ways to give your document a professional look. By default, the text is aligned to left in Word.

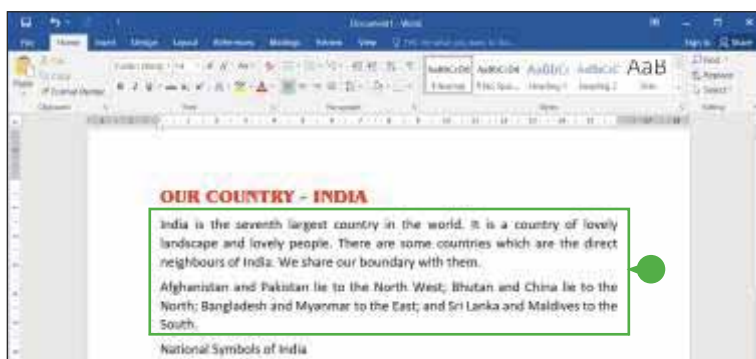


1. Select the text that you want to align.
2. Click on **Home** tab.
3. Click on one of the following buttons:
  - **Align Left** (≡) to left-align the text (or Ctrl+L)
  - **Center** (≡) to center-align the text (or Ctrl+E)
  - **Align Right** (≡) to right-align the text (or Ctrl+R)
  - **Justify** (≡) to justify text between the left and right margins (or Ctrl+J)

- The text is displayed with the new alignment.

In this example, we have chosen **Justify** alignment.

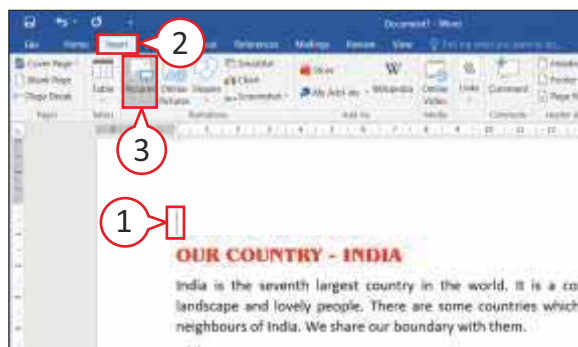
To deselect the text, click outside the selected area.



# Inserting Graphics

In Word, you can insert **pictures** or **clip arts** in the document, along with the text. Inserting pictures makes the document more legible, presentable and easy to understand. Picture can be inserted from computer or from the Internet.

## INSERTING PICTURE FROM COMPUTER



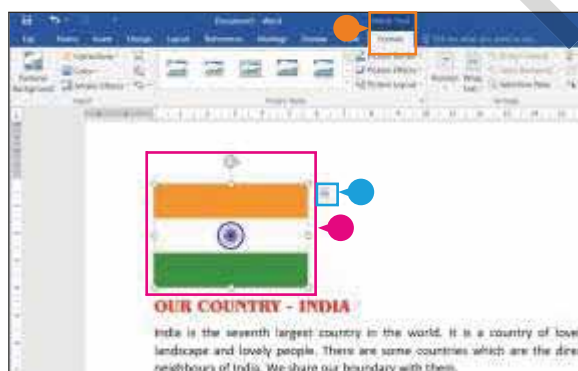
1. Click on the location in your document where you want to add a picture.
2. Click on **Insert** tab.
3. Click on **Pictures**.

The **Insert Picture** dialog box appears.



- This area shows the location of the displayed pictures. You can click on this area to change the location.
4. Click on the picture you want to add.
  5. Click on **Insert** to add picture to your document.

**Note:** While making this project, the picture of the flag you have on your computer may vary.



- The picture appears in your document selected and surrounded by handles (○).

To rotate the picture, you can drag the rotation handle (⌚).

- The **Layout Options** (📐) controls text flow around the picture.

- The **Picture Tools Format** tab appears. You can use this tab to format pictures.



### Update Your Knowledge

- To select the text using keyboard, press and hold **SHIFT** key while pressing **ARROW** keys.
- You can also press **SHIFT + CTRL** keys to select non-consecutive words in a row.
- If you press and hold **SHIFT + CTRL** while pressing **RIGHT ARROW** key five times, you select five consecutive words to the right of the insertion point.

# WRAPPING TEXT AROUND AN IMAGE

**Wrapping** text means adjusting the text around the objects or images accordingly. Word provides many options to wrap the text.



1. Click on the **object** or **picture** around which you want to wrap text.
2. Click on **Wrap Text** button.
3. Click on any of the desired wrap styles discussed below:

- **In Line with Text** option makes no change and does not wrap the text around the graphic.
- **Square** option wraps text in a square around the graphic, regardless of its shape.
- **Tight** option wraps text around the outside edge of graphic.
- **Through** option lets you edit wrap points of a graphic by dragging them to match the shape of the graphic; you can wrap text to follow the graphic shape.
- **Top and Bottom** option wraps text around the top and bottom of graphic but leaves the space on either side of the graphic blank.
- **Behind Text** option lets the text run over the graphic, as if the graphic is not there.
- **In Front of Text** option lets the graphic block text underneath the graphic location.
- **Edit Wrap Points** option displays handles that represent image wrap points. You can drag the handles to change the position of the wrap points. Changing a wrap point does not change the image appearance, but affects the way text wraps around the image.

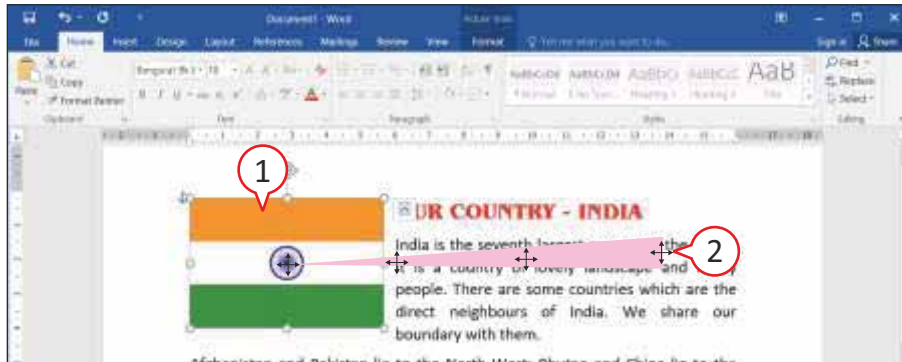


The wrap style is applied.  
This example wraps the text **squarely** around the picture.



## MOVING AN IMAGE

You can move the image anywhere in the document.



1. Click on the image that you want to move.

The mouse pointer changes to [↕].

2. Drag the image to a new location.



- The image moves to the new location, as soon as you release the mouse.

You can also increase or decrease the size of the image, according to the need, if it is too large or too small.

## INSERTING ONLINE PICTURES

You can also insert a picture from an online source into a Word document. By default, the online picture search uses **Bing Image Search**. The images you find online are licenced under **Creative Commons**. Choose the online pictures carefully to avoid violating copyright laws.



1. Click on location or move the cursor where you want to add a picture.
2. Click on **Insert** tab.
3. Click on **Online Pictures** button.



The **Insert Pictures** window appears.

4. Type a keyword or description of the image you want.
5. Click the **Search** button.





The result of your search appears.

- You can use the **scrollbar** to navigate through the search results.
- 6. Click on the picture you want to add to your document.
- 7. Click on **Insert**.



- The online picture appears in your document, selected and surrounded by handles [○].

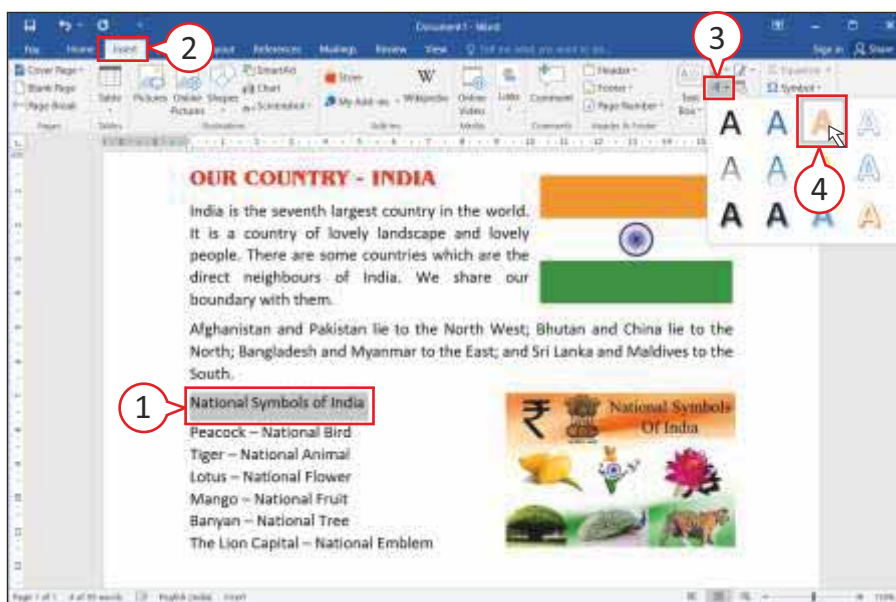
To rotation the picture, you can drag the rotation handle (⦿).

- The **Layout Options** (⌵) controls text flow around the picture.

The **Picture Tools Format** tab appears. You can use this tab to format pictures.

## Adding WordArt

**WordArt** provides many unique and decorative text styles. You can add any style to your document to display a decorative title or draw attention towards important information. You can create WordArt graphic at the same time when you create text, or you can apply a WordArt style to the existing text.

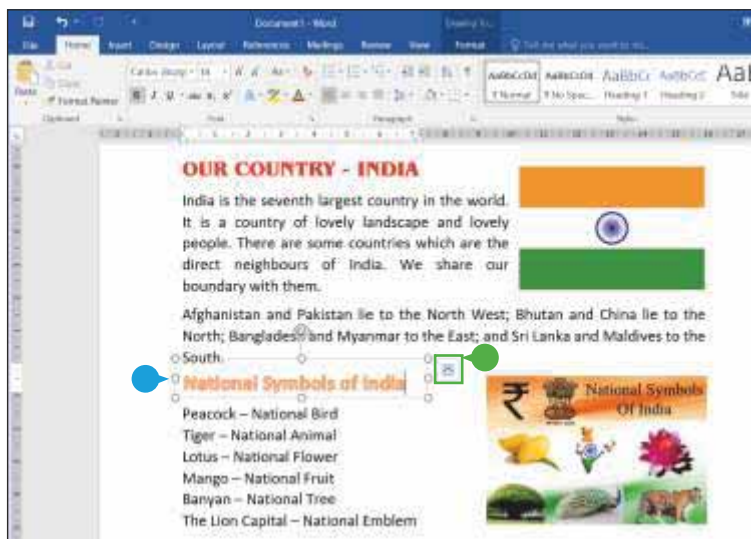


1. Select the text you want to convert into WordArt.

2. Click on **Insert** tab.
3. Click on **WordArt** button.

The WordArt gallery appears.

4. Click on the WordArt style you want to use.



- The WordArt appears in a text box surrounded by handles [○] in your document.

To rotate the WordArt, you can drag the rotation handle [⦿].

- The **Layout Options** [📐] controls text flow around the WordArt.

You can also increase or decrease the size of WordArt, according to need, if it is too large or too small.

5. Click outside the text box to remove it (not shown).



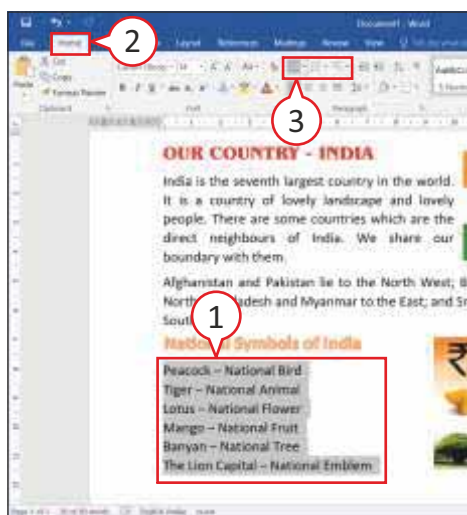
### How can WordArt be added to a new text?

1. Click in the document where you want to add WordArt.
2. Click the **Insert** tab.
3. Click the **WordArt** button. The WordArt gallery appears.
4. Click the WordArt style you want to apply. The words 'Your Text Here' appear at the location you selected in Step 1.
5. Type your new text. Word converts the text to a WordArt graphic.

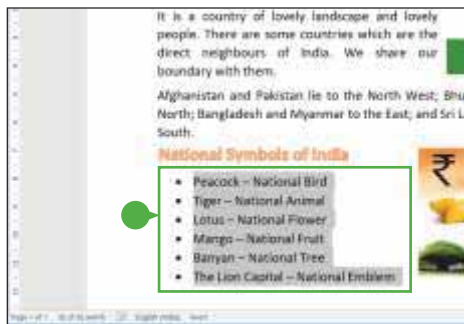
## ADDING BULLETS OR NUMBERING

A **bullet** is a **dot** or a **symbol** that is used wherever you want to display the text in the form of points. A bullet can be given when the order of the points does not matter, i.e. **unordered**. In Word, the bullet is marked in the form of black dot (•), by default.

An **ordered** list or **numbered** list can also be used whenever you want to display the points in some sequence or ordered manner.



1. Select the text that you want to format.
  2. Click on **Home** tab.
  3. Click on one of the list buttons:
    - **Bullets** button (☐) creates a bulleted list.
    - **Numbering** button (☐) creates a numbered list.
    - **Multilevel** button (☐) creates a multi-level list.
- Word applies the formatting to the list.



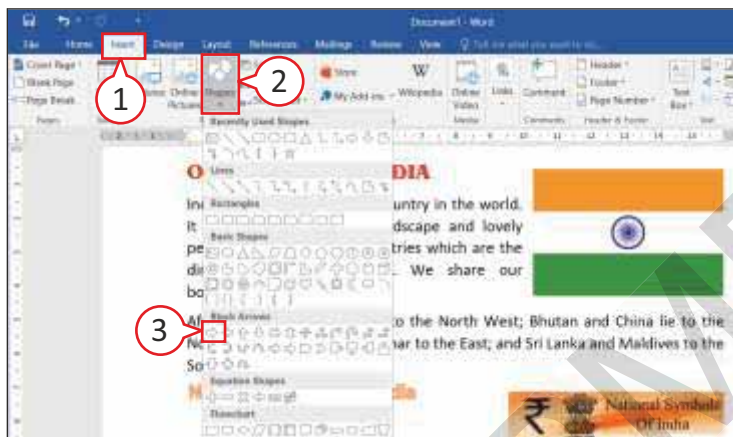
- In this example, we have used a **bulleted list**.

To add more text to the list, you can click at the end of the line and press **Enter** key; Word immediately starts a new line in the list with a bullet or number.

To turn off a bulleted or numbered list, you can press **Enter** key twice after the last item in the list.

## ADDING SHAPES

You can add a variety of arrows, callouts, squares, stars, flowchart shapes and many more shapes in your document. While you may not need shapes in every document you create, they add to its visual appeal.



1. Click on **Insert** tab.

2. Click on **Shapes**.

The full Shapes palette opens.

3. Click on the shape that you want to use.

The mouse pointer changes to [+].



4. Click and drag in the work area to draw the selected shape.



- Release the mouse. Shape appears surrounded by handles [○].

To rotate it, you can drag the rotation handle (⌚).

- The **Layout Options** (⌂) controls text flow around the shape.

The **Drawing Tools Format** tab appears.

You can press **Esc** key or click anywhere to continue working in your document.

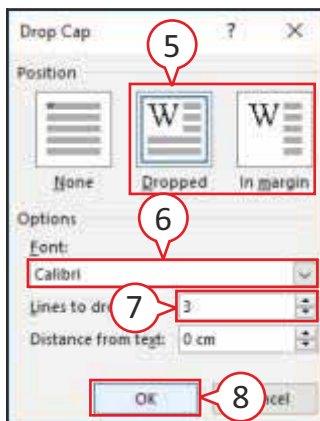


## DROP CAP

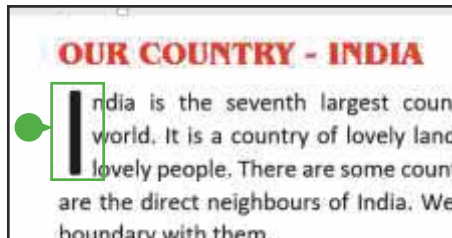
**Drop Cap** feature allows you to display the first character of the paragraph in a large capital letter that enhances the appearance of the paragraph.



1. Click on the paragraph in which you want to display a Drop Cap.
2. Click on **Insert** tab.
3. Click on **Drop Cap** [ ].
4. Click on **Drop Cap Options**.  
The **Drop Cap** dialog box appears.



5. Click on the type of Drop Cap you want to create.
6. This area displays the font Drop Cap will display. Click on the font you want the Drop Cap to display.
7. This area displays the **number of lines** that the Drop Cap will extend down from the first line of the paragraph. To change the number of lines, double-click the number in this area and then type a new number.
8. Click on **OK** to create the Drop Cap.



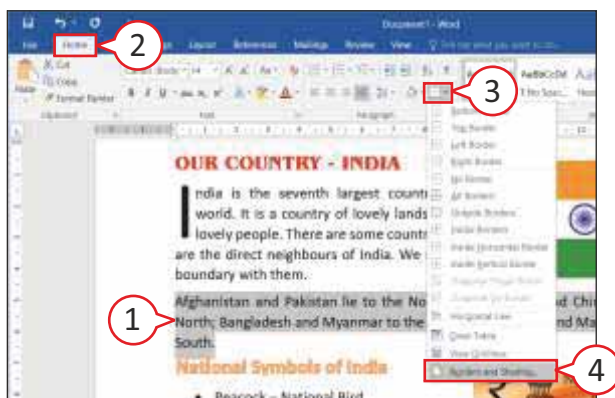
- The Drop Cap appears in your document.

To deselect the Drop Cap, click outside it.

To remove a Drop Cap, repeat steps 1 to 5, selecting **None** in step 5. Then perform step 8.

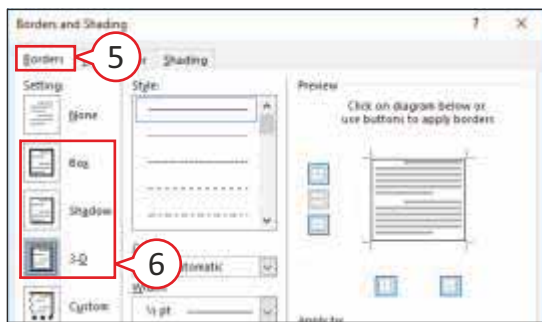
## ADDING A BORDER

You can add a border to the text in your document to draw attention towards important information.



1. Click anywhere in the text or select the text to which you want to add a border.
2. Click on **Home** tab.
3. Click on down arrow of **Borders** [ ].
4. Click on **Borders and Shading**.



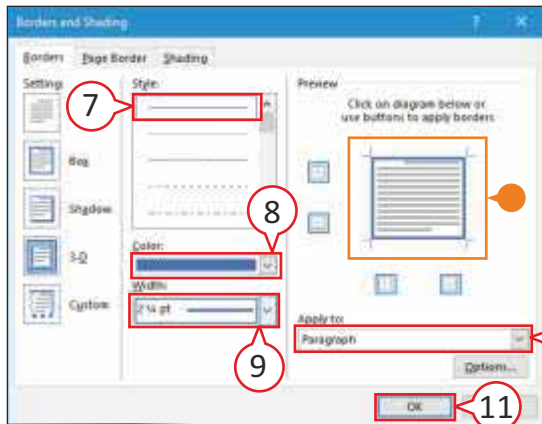


The **Borders and Shading** dialog box appears.

5. Click on the **Borders** tab.

6. Click here to select a type of border.

*This example uses 3-D.*



7. Click here to select the **style** for border.

8. Click on down arrow of **Color** and select a color for the border.

9. Click on the down arrow of **Width** and select a thickness for the border line.

10. Click on the down arrow and select **Paragraph**.

● *This area shows the result of your selection.*

11. Click on **OK**.



● The border appears around the selected text.

*To remove the selection, click anywhere outside the selection.*

*To remove the border, repeat steps 1 to 6, selecting **None** in step 6. Then perform step 11.*



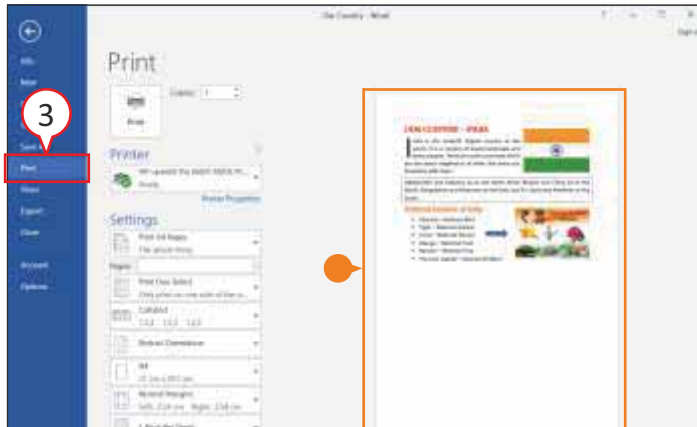
Friends, after adding the border, your project is now complete.



While creating or after creating the project, it must be saved into the memory of computer for its future use. File created in Word is saved with the file extension **.docx**.

# Printing a Document

You can produce a hard copy of the document displayed on your screen. Before printing your document, make sure that the printer is turned on.



1. Open the document (not Shown).
2. Click on the **File** tab (not Shown). Backstage view appears.

3. Click on **Print** (or press Ctrl+P).

- This area shows the **Print preview** of your document. You can see it before printing because your printout will look the same.



4. You can specify the number of copies to be printed.
5. You can choose a printer from the **Printer** drop-down list.
6. Click on **Settings** drop-down list.
7. Click on the settings such as Page ranges to identify the pages you want to print.



8. You can click this option to specify whether you want to print the document on one side or both sides of the sheet.
9. You can use this option to specify the number of pages you want to print on each sheet of paper.
10. Click on **Print**.

The Word sends document to the printer and you will get the printout of your project.



## Update Your Knowledge

Common shortcut keys for Office suite (Word, Excel, PowerPoint and Access) are:

- **Ctrl + S** Saves a document
- **Ctrl + P** Prints a document
- **Ctrl + Z** For undoing an action
- **Ctrl + C** Copies selected text or graphic
- **Ctrl + I** Applies or removes italic formatting
- **Ctrl + X** Cuts or moves selected text or graphic
- **Ctrl + V** Pastes the most recent copy or cut
- **Ctrl + B** Applies or removes bold formatting
- **Ctrl + A** Selects the entire text of the document
- **Ctrl + U** Applies or removes underline formatting

## In a Nutshell

- The undo feature is used to reverse the action taken in a document.
- In Word, text underlined with red and blue colors displays spelling and grammatical errors respectively.
- Thesaurus is a list of words grouped together, containing synonyms and antonyms.
- Find and Replace command is used to search and replace the selected text or word with new one.
- Pictures and clip arts can be inserted into the document, along with the text.
- WordArt is used to display a decorative title or draw attention towards important information.
- Drop cap feature displays the first character of the paragraph in a large capital letter.



## Exercises

### A. Tick [✓] the correct answer.

- The colored wavy line which shows the spelling mistake is ..... .  
 a. blue ☐ b. yellow ☐ c. red ☐
- Inserting ..... makes the document more attractive and presentable.  
 a. words ☐ b. sentences ☐ c. pictures ☐
- ..... text means adjusting the text around the images accordingly.  
 a. Inserting ☐ b. Wrapping ☐ c. Review ☐
- Shapes command is available under ..... tab.  
 a. Home ☐ b. Insert ☐ c. Review ☐
- ..... feature displays first character of the paragraph in capital.  
 a. WordArt ☐ b. Drop Cap ☐ c. Thesaurus ☐

### B. Write 'T' for True and 'F' for False statements.

- Copying removes the text from its original location.
- You can press Ctrl+Z keys to use Undo feature.
- Word provides many options to wrap the text around image.
- You cannot move an image in the document.
- Bullet is used to show unordered list in a document.
- We cannot add border to the text in our document.

**C. Fill in the blanks.**

1. .... a text means the text disappears from its original location.
2. .... reverses the case of letters or selected text.
3. .... provides many unique, decorative text styles.
4. .... feature increases the size of the first letter of a paragraph.
5. You can produce a ..... of the document displayed on screen.

**D. Differentiate between the following.**

- |                  |               |
|------------------|---------------|
| 1. Copying Text  | Moving Text   |
| .....            | .....         |
| .....            | .....         |
| .....            | .....         |
| 2. Bulleted List | Numbered List |
| .....            | .....         |
| .....            | .....         |
| .....            | .....         |

**E. Answer the following questions.**

1. What is the use of undo feature in Word?  
.....  
.....
2. How are spelling and grammar mistakes identified in Word?  
.....  
.....
3. What is Thesaurus? How is it useful?  
.....  
.....  
.....
4. What are the different text alignment options in Word?  
.....  
.....
5. What do you mean by wrapping text around a graphic?  
.....  
.....

**F. Application-based Question**

Rohit has written a paragraph on 'Importance of Computers'. Now, he wants to display the title in a decorative way. Tell him the option that he should use.

.....



# Activity Section

## Lab Activity

**Carry out the following activity in Word.**

- Start Microsoft Word and create a notice for your school notice board as shown below, using shapes and border.
- Change the text accordingly, e.g. use your school name instead of ABC Public School, etc.
- Save the file as 'Notice' on the desktop, close the file and exit Word.

### Subject Integration

#### English

This integration helps students enhance their writing skills by way of creating notice.

**NOTICE**

ABC PUBLIC SCHOOL

KAROL BAGH

DELHI

ON THE SPOT PAINTING COMPETITION FOR CHILDREN

PARTICIPANT AGE 8 to 14 YEARS



Venue : School Ground

Day and Date : Wednesday, 14<sup>th</sup> September 2022

Time : 10.30 a.m.

Children should bring their own drawing sheets, colors, brushes, etc.

**WINNER OF THE COMPETITION WILL RECEIVE A GIFT VOUCHER.**

### Skill Formation

This multi-steps directional activity enhances the cognitive and communication skills of the students.

## Group Discussion

- 1. Divide the students into two groups and discuss the topic – 'Types of Graphics We can Insert into a Document'.**
- 2. Divide the students into two groups and discuss the topic – 'Spelling and Grammar Tool Increases the Language Ability'.**

## Online Link

To learn more about editing and formatting in Word, visit the website:

<https://thedockforlearning.org/series/practice-projects-for-microsoft-word/>

# 4

## PowerPoint

### OBJECTIVES

After completing this chapter, you will be able to:

- Understand the presentation software PowerPoint.
- Identify the components of PowerPoint window.
- Learn how to create and add slides.
- Learn formatting and saving a PowerPoint presentation.
- Run a slide show of PowerPoint presentation.

Hey Friends! Did you enjoy typing and editing in Word? Now, let us learn about presentation software, PowerPoint.



## Introduction

**PowerPoint** is an application software developed by Microsoft that allows you to create presentations. It could be combination of multiple media such as audio, video, text, etc.



One page of your presentation is called a **slide**, and a group of slides on any one topic is called **presentation**.

Through presentations, you can communicate ideas, messages, and other information to the viewers.

## STARTING POWERPOINT

To start PowerPoint program, follow these steps:

1. Click on **Start** icon to open Start menu (or press ).

A list of all installed apps appears on the left.

2. Scroll down and click on **PowerPoint**. The **PowerPoint** opens and displays its **Start screen**.



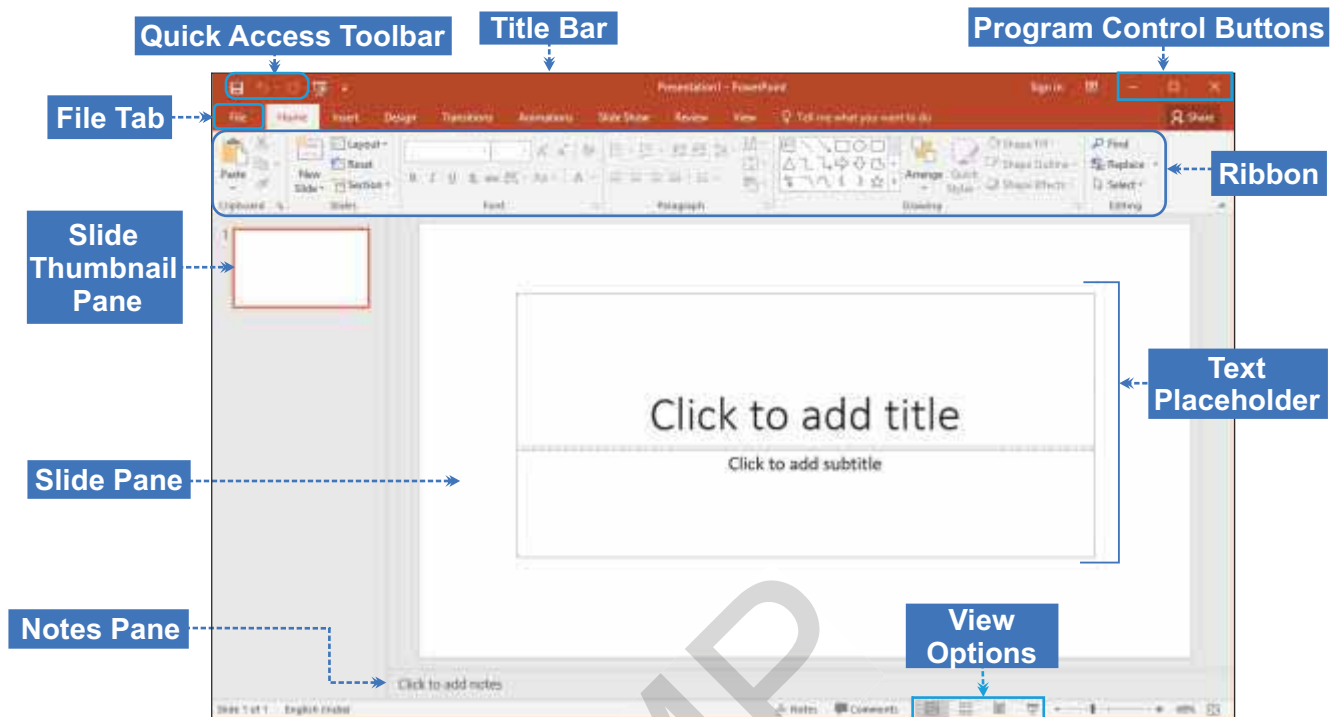
3. Click on **Blank Presentation**.

- You can also create a new presentation by clicking a theme.
- You can also open a recently opened presentation.

A blank presentation titled **Presentation1** appears on your screen.

# POWERPOINT WINDOW

With the help of several components present in the PowerPoint window, you can perform your task efficiently.



**Title Bar:** Title bar shows the name of the currently displayed presentation.

**File Tab:** When you click on File tab, a Backstage view appears. In Backstage view, you will find a list of commands such as save, open, and print.

**Quick Access Toolbar:** It displays quick access buttons to the Save, Undo, Redo, and Slide Show commands.

**Ribbon:** It displays groups of related commands in tabs. Each tab offers shortcut buttons to common tasks.

**Program Control Buttons:** Use these buttons to minimize the program window, restore the window to full size, or close the window.

**Slide Pane:** This area displays a large view of the current slide. You can enter text, graphics, or animations directly in the slide pane.

**Slide Thumbnail Pane:** It displays the thumbnail version of each slide of the slide pane.

**Notes Pane:** It displays the notes for the current slide. This is a text area that consists of remarks to share with your viewers.

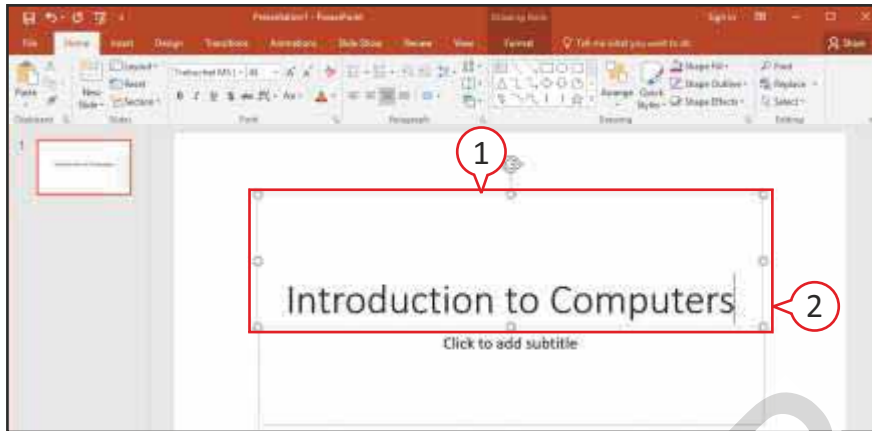
**Text Placeholder:** It allows you to type titles, body text, and bulleted list in slides.

**View Options:** They allow you to quickly change the way your presentation is displayed on the screen. Normal view, slide sorter view, reading view, and slide show view are the four main views of PowerPoint.

# Creating the Title Slide

When you open a new presentation in PowerPoint, the presentation program assumes that you will begin your presentation with the title slide. Any text typed after a new slide display becomes the title text in the title text placeholder.

## ENTERING THE TEXT IN TITLE

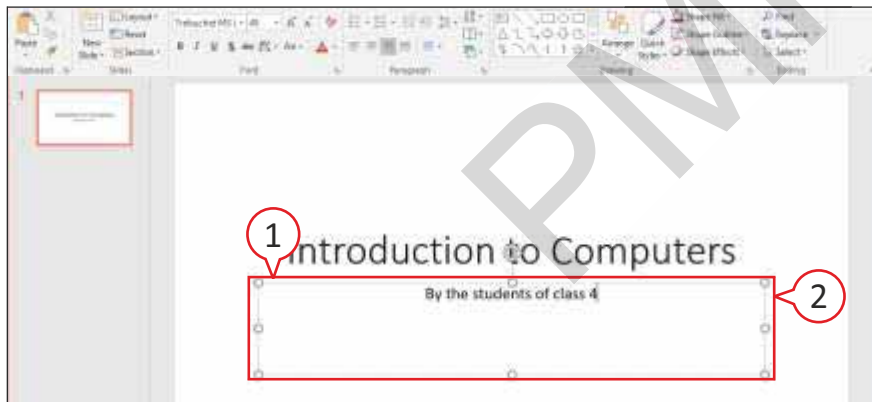


1. Click on the **title text placeholder** box.

2. Type your text in it.

The typed text is displayed in the title text placeholder as well as in the slide thumbnail pane.

## ENTERING THE TEXT IN SUBTITLE



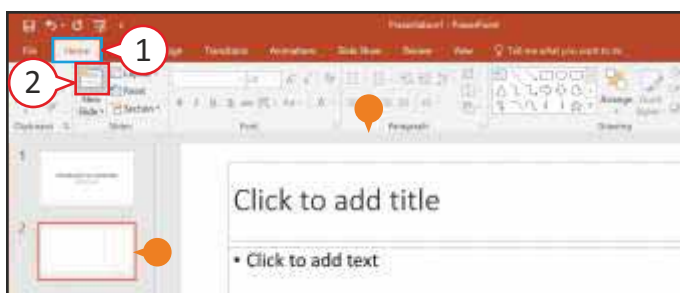
1. Click on the **subtitle text placeholder** box.

2. Type your text in it.

The subtitle text is displayed in subtitle text placeholder as well as in the slide thumbnail pane.

# Adding a New Slide

A PowerPoint presentation is a combination of many slides. After creating a title slide, your next step is to add a new slide in the presentation. You can add any number of slides into the presentation as per the requirement.



1. Click on **Home** tab.

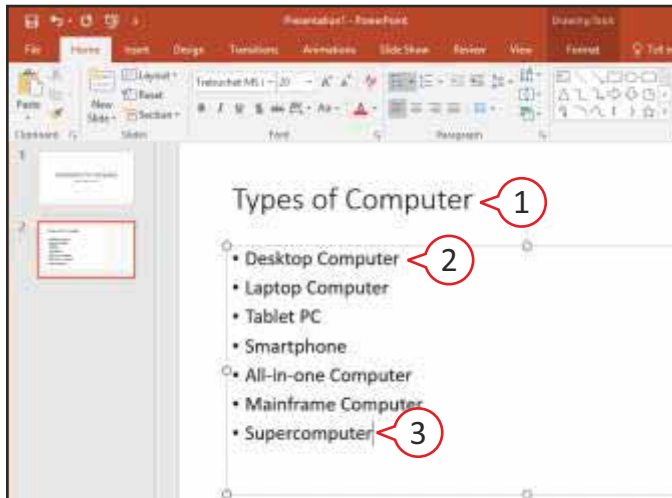
2. Click on the **New Slide** button (or press **Ctrl+M**).

- The slide 2 appears in the presentation as well as in the slides thumbnail pane.



## ADDING TEXT TO SLIDE 2

Type the text in the same way as you typed text for slide 1.



1. Click on the title text placeholder box, and type your text.
2. Click on the subtitle text placeholder box, and type your text.

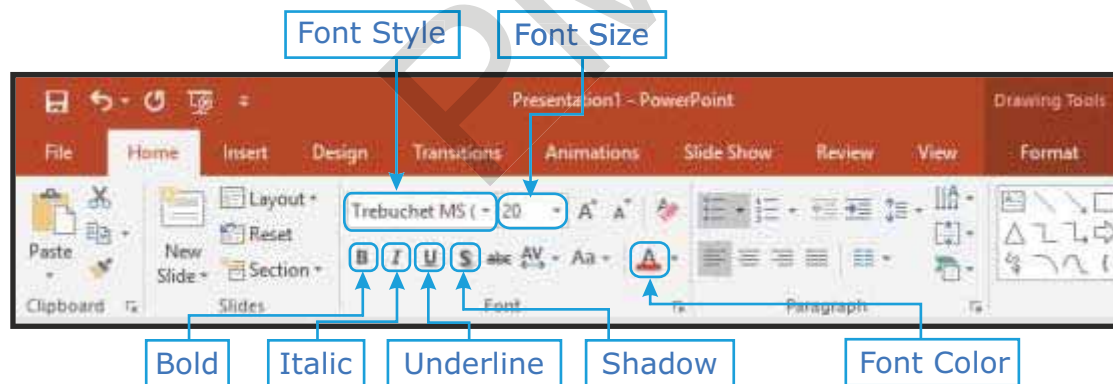
A **bullet** appears besides your text. When you press the **Enter** key, a new bullet appears in the next line.

3. Complete your remaining text as you did in earlier steps.

In the same way, you can add more slides and complete your presentation.

## Formatting Presentation

Formatting makes your presentation look more attractive and effective. All these formatting options are present in **Home** tab.



You can format and save the PowerPoint presentation the same way as you do in MS-Word document.

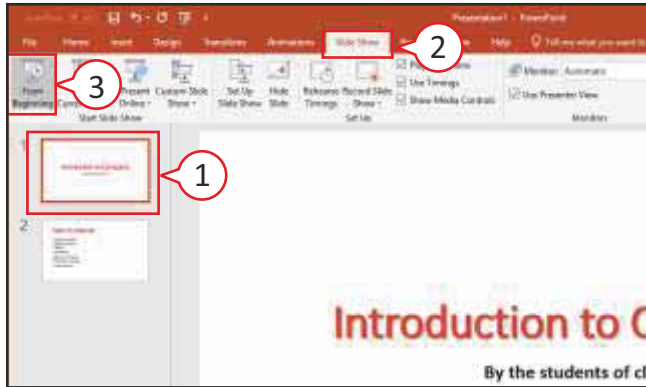


## Saving a Presentation

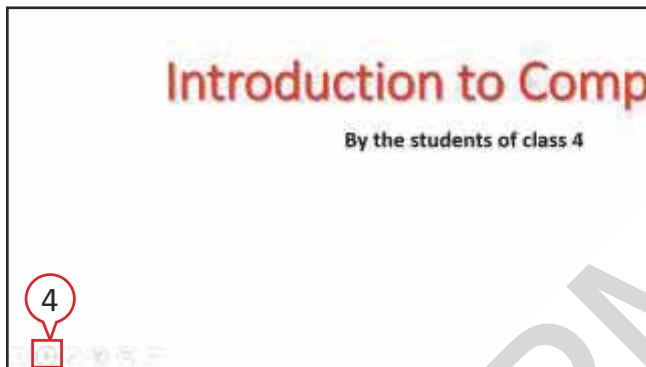
After creating the presentation, it must be saved for future use. You can review and edit the presentation any time in future once it is saved. The default extension of PowerPoint 2016 file is **.pptx**.

# Running a Slide Show

Slide Show view is used to give the presentation to a group of people. A slide show displays one slide at a time, filling the entire screen.



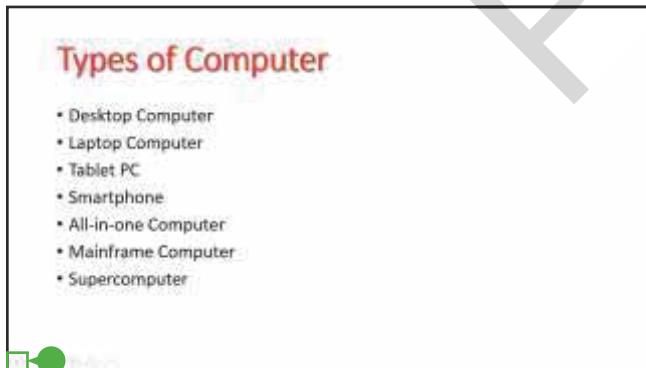
1. Click on the first slide you want to view in the slide show.
2. Click on **Slide Show** tab.
3. Click on **From Beginning** (or press F5).



The slide you selected fills the screen.

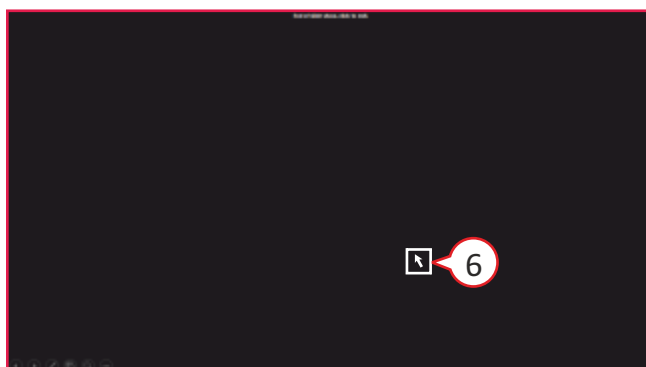
You can press **Esc** key to end the slide show at any time.

4. To display the next slide, click on **Next** button or click anywhere on the current slide.



The next slide appears.

- To return to the previous slide, click on **Back** button or press **Backspace** key from the keyboard.



5. Repeat step 4 until the blank screen appears, indicating that you have reached at the end of the slide show.
6. Click on the screen to exit the slide show.

## In a Nutshell

- PowerPoint is an application software that is used to create presentations.
- A group of slides on any one topic is called presentation.
- Slide pane displays a large view of the current slide.
- Slide thumbnail pane displays the thumbnail version of each slide.
- A PowerPoint presentation is a combination of many slides.
- Formatting makes our presentation look more attractive and effective.
- The default extension of PowerPoint 2016 file is .pptx.
- Slide show displays one slide at a time, filling the entire screen.



## Exercises

### A. Tick [✓] the correct answer.

- A presentation program developed by Microsoft is ..... .  
 a. Word ☐ b. Paint ☐ c. PowerPoint ☐
- ..... displays a large view of the current slide.  
 a. Notes pane ☐ b. Ribbon ☐ c. Slide pane ☐
- There are ..... main views of the presentation.  
 a. five ☐ b. four ☐ c. six ☐
- ..... buttons allow us to quickly change the way our presentation is displayed on the screen.  
 a. View ☐ b. Control ☐ c. Slide ☐
- You can press ..... key to end the slide show at any time.  
 a. Ctrl ☐ b. Esc ☐ c. Alt ☐

### B. Write 'T' for True and 'F' for False statements.

- A group of slides on any one topic is called a presentation. ☐
- Title bar shows the name of the currently displayed presentation. ☐
- Slide pane displays the notes for the current slide. ☐
- Only one slide can be added into a PowerPoint presentation. ☐
- You can also press F5 key for Slide Show view. ☐

**C. Fill in the blanks.**

1. One page of the presentation is called a .....
2. PowerPoint assumes that new presentation begins with the ..... slide.
3. The default extension of PowerPoint 2016 file is .....
4. Formatting options are present in ..... tab.
5. A ..... displays one slide at a time, filling the entire screen.

**D. Differentiate between the following.**

Slide	Presentation
.....	.....
.....	.....
.....	.....
.....	.....

**E. Answer the following questions.**

1. What is the use of PowerPoint?  
.....  
.....  
.....
2. Name the various views of PowerPoint window.  
.....  
.....  
.....
3. What do you mean by text placeholder?  
.....  
.....  
.....
4. Why do you need to run a slide show in PowerPoint presentation?  
.....  
.....  
.....

**F. Application-based Question**

Ashish's teacher asked him the name of buttons which are used to minimize the program window, restore the window to full size, or close the window. Help him to answer which buttons are used to do all these activities.

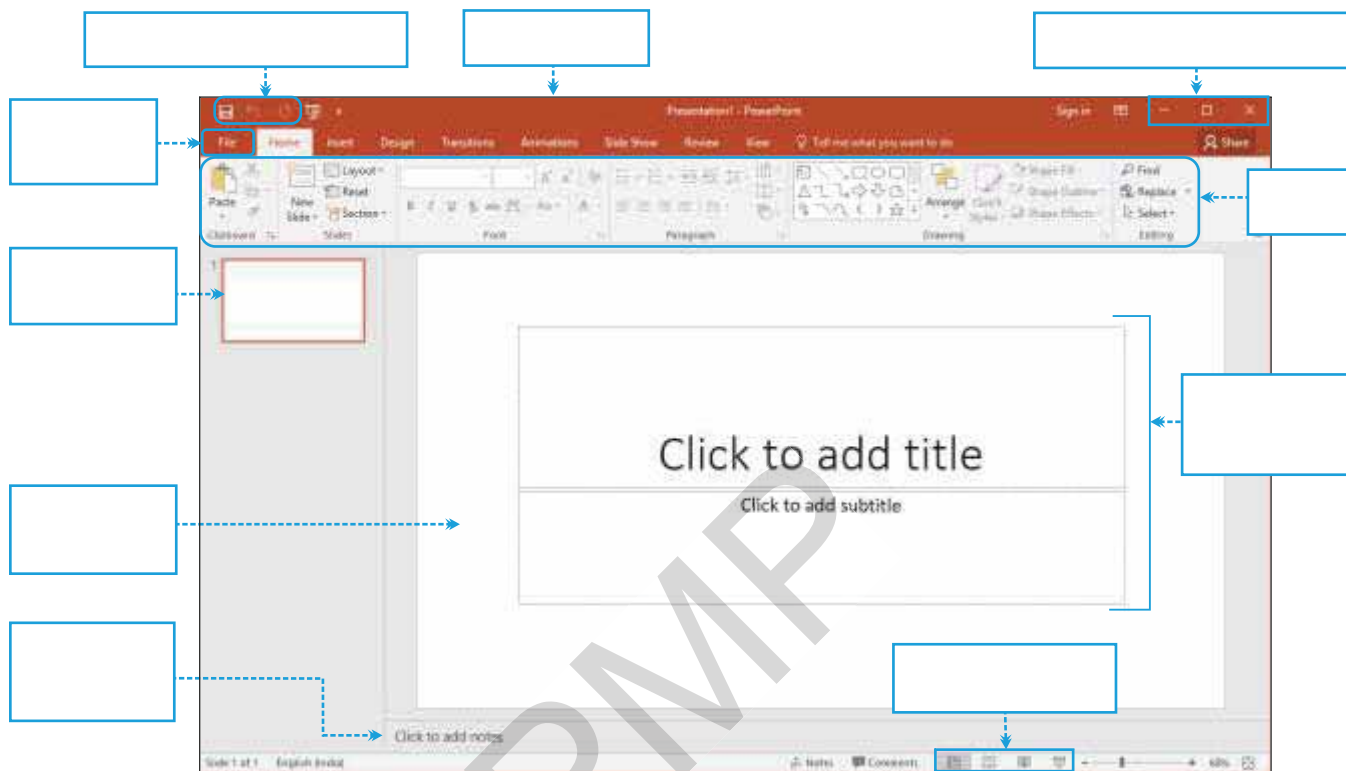
.....



# Activity Section

## Activity Label

Label the components of PowerPoint window in the given boxes.



## Lab Activity

Create a PowerPoint presentation on the topic – 'Different Modes of Transport for Going to School'.

- Create four slides including the title slide.
- Run the presentation using slide show view.

### Subject Integration

#### EVS

This integration would make students learn about the different modes of transport.

## Group Discussion

Divide the students into groups and discuss the topic – 'Digital Presentation is the Most Effective Classroom Learning Tool'.

## Online Link

To learn more about PowerPoint, visit the website:

<https://www.makeuseof.com/tag/microsoft-powerpoint-guide/>

# Worksheet-I

## Chapters 1 - 4

### A. Tick [✓] the correct answer.

1. A/An ..... card is a circuit-board that is fitted in a socket on the motherboard.  
a. disk ☐ b. adapter ☐ c. LAN ☐
2. Fan fitted inside the ..... keeps the power supply cool.  
a. CD-ROM ☐ b. SMPS ☐ c. Ports ☐
3. .... option can add an app permanently on the Start menu.  
a. Pin to Start ☐ b. Pin to Taskbar ☐ c. Pin to Desktop ☐
4. .... screen prevents others from accessing our files.  
a. Lock ☐ b. Desktop ☐ c. Dark ☐
5. Inserting ..... makes the document more attractive and presentable.  
a. words ☐ b. sentences ☐ c. pictures ☐
6. Shapes command is available under ..... tab.  
a. Insert ☐ b. Review ☐ c. Home ☐
7. .... displays groups of related commands in tabs.  
a. Ribbon ☐ b. Slide pane ☐ c. Notes pane ☐
8. .... displays a large view of the current slide.  
a. Notes pane ☐ b. File tab ☐ c. Slide pane ☐

### B. Write 'T' for True and 'F' for False statements.

1. RAM stores data and instructions temporarily. ☐
2. Power port connects the computer system to the power supply. ☐
3. Wallpaper is the background image on the desktop. ☐
4. You can adjust the volume of audio in the computer. ☐
5. Square option wraps text around the outside edge of graphic. ☐
6. All formatting options are present in File tab. ☐
7. Word provides many options to wrap the text around image. ☐
8. A group of slides on any one topic is called presentation. ☐
9. Slide pane displays the notes for the current slide. ☐

10. Only one slide can be added into a PowerPoint presentation.

**C. Fill in the blanks.**

1. .... is a power supply unit in a computer.
2. CPU is also called ..... or .....
3. .... option displays multiple copies of the same image in tiles format.
4. You can lock your computer to ensure its .....
5. .... reverses the case of letters of selected text.
6. .... provides many unique and decorative text styles.
7. .... view is used to give the presentation to a group of people.
8. The default extension of PowerPoint 2016 file is .....

**D. Define the following.**

- |             |              |                 |
|-------------|--------------|-----------------|
| 1. ROM      | 2. SMPS      | 3. Multitasking |
| 4. Wrapping | 5. Thesaurus | 6. Slide pane   |

**E. Differentiate between the following.**

1. Hard disk drive and DVD drive
2. RAM and ROM
3. Theme and Wallpaper
4. Copying text and Moving text
5. Bulleted list and Numbered list
6. Slide and Slide show

**F. Answer the following questions.**

1. What is the function of disk drive? Give its examples.
2. Write down the names of some ports.
3. How do we open an app that is not displayed as tile?
4. What is the advantage of using or changing a theme?
5. What are the different text alignment options in Word?
6. What do you mean by title slide?
7. What do you mean by text placeholder?
8. Name the various views of PowerPoint window.

## 5

# Internet – Surfing and Security

## OBJECTIVES

After completing this chapter, you will be able to:

- Learn about Internet and its history.
- Understand the advantages and disadvantages of using Internet.
- Identify the equipments that help us connect to Internet.
- Learn the use of search engine and web browser.
- Understand the guidelines to follow for online safety.

Hey Friends! Internet provides access to a number of goods, services, and information to the people in every nook and corner of the world. Let us know more about it.



## Internet

A **network** is defined as a group of two or more computer systems linked together. **Internet** is the largest network that links millions of computers to share information across the world.

The biggest advantage of the Internet is that you can access it from a computer or mobile device anywhere: at home, at office, at school, or at a restaurant.



Largest network that links the computers worldwide

## HISTORY OF INTERNET

The history of the Internet starts with the birth of **ARPANET**, which was the first network of computers in the world. It was set up by the **Department of Defense** of the USA in 1969.

**ARPANET** stands for **Advanced Research Projects Agency Network**. It was developed with the aim of sharing information on research and development in the field of science and technology. It was initially used only by the government officials and scientists.

Later on, it was opened for the universities to spread education and share their resources. The network grew bigger and bigger, and led to the present-day **Internet**. Millions of people started having access to Internet by the mid 1990s. Today, almost all the individuals, companies and organizations of the world use Internet.



## ADVANTAGES AND DISADVANTAGES

You know that Internet comes with many benefits, but unfortunately it has some drawbacks as well.

### Advantages of Internet

- You can get information on any topic of your interest easily.
- You can send and receive e-mail messages at a very fast speed.
- You can play online games and make new friends.
- You can exchange text messages with your friends through chatting.
- You can do video conferencing with a group of people.
- You can listen to music and watch movies.
- You can buy books, dresses and other products.



### Disadvantages of Internet

- Many people make friends and play games on the Internet. But there is no direct connection with friends and family in reality.
- All information you get on the Internet is not fully accurate.
- People spend more time surfing irrelevant websites which may affect their work or study.
- Cybercrime is common nowadays on Internet. Your personal information can be misused on Internet.
- There is plenty of inappropriate content available on the Internet which may not be suitable for children.



## REQUIREMENTS FOR THE INTERNET

To connect to Internet, you need the following equipment:

### Computer System

To use Internet, your primary need is a computer or a mobile device.



### Modem

Another requirement for connecting to the Internet is **modem**. A modem is a short form for **Modulator/ Demodulator**. It is a device that receives data from the Internet and sends data from your computer to the Internet. There are two main types of modem: **dial-up modem** and **digital modem**.



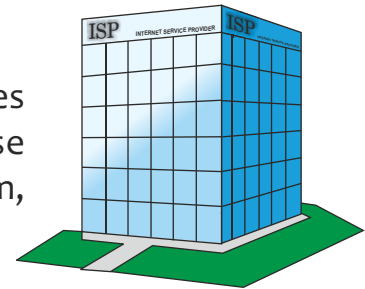
## Internet Connection

You often connect to the Internet through **dial-up** or **broadband** connection.

- A **dial-up connection** is a less expensive way to access the Internet but at a slow speed. With dial-up access, you use a computer, a dial-up modem, and a regular telephone line.
- **Broadband** is a high-speed Internet connection. With broadband access, you use a computer, a digital modem, and broadband line. Using broadband connection, your computer is usually connected to Internet the entire time it is on.

## Internet Service Provider

The Internet connection is provided by different companies called **Internet Service Providers (ISP)**. ISPs allow you to use Internet for a monthly charge. BSNL, Airtel, Tata Indicom, Reliance, Den, etc. are some of the ISPs in India.



## Search Engine

If you want any information on any topic for which you do not know the URL or address, you can get the information through search engine. **Search engine** is a program that searches through the collection of web pages for a particular information. It allows users to enter any **keyword** for which it displays a list of websites with related information.

Many search engines use a program called **spider** to display a list of all web pages that contain the word or phrase you entered. A spider reads pages on websites in order to create a catalog or index of hits. A **hit** is any web page name that lists as a result of a search.

Some popular search engines are **Google**, **Bing**, and **Yahoo**.



Google



Bing



Yahoo!



### Update Your Knowledge

Today, users often connect to the Internet via broadband Internet service because of its fast data transfer speed and its always-on connection.



### Do You Know?

**Dial-up connection** is still used in remote areas, where **broadband** facility is not yet available.

# Web Browser

A **web browser**, or simply **browser**, is a software program that allows you to browse the Internet and open different websites. **Mosaic** was the first successful graphical web browser, developed by **Marc Andreessen** and **Eric Bina** in 1992, and released in 1993. More than one web browser can be installed on a single computer.

## DIFFERENT TYPES OF WEB BROWSERS

**Microsoft Edge:** Edge is the new web browser in Windows 10 which enables you to browse the web seamlessly with many new features.

**Microsoft Internet Explorer:** This web browser has been the most widely used browser in the world. It was developed by Microsoft in 1995 as a supportive package to Microsoft Windows Operating System.

**Mozilla Firefox:** It is the second most famous browser after Internet Explorer. It can be used on several operating systems including Windows, Macintosh, and Linux.

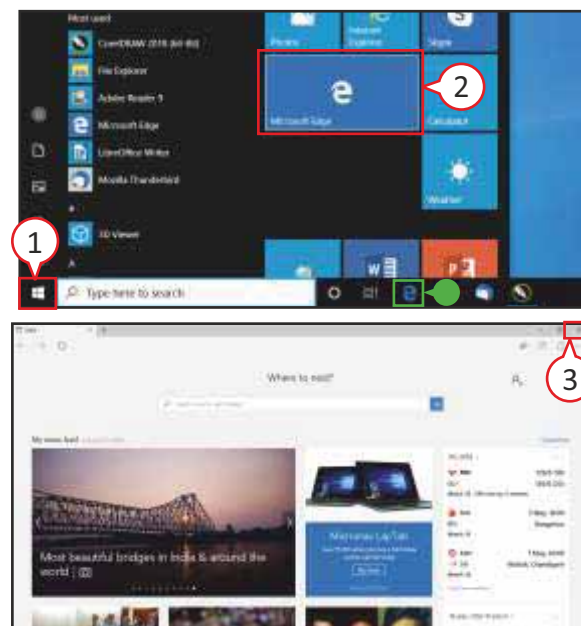
**Google Chrome:** Google Chrome is a browser developed by Google. It is faster, safer, and easier to install and work on.

## Microsoft Edge

Microsoft **Edge** is a new default web browser of Microsoft and is included in Windows 10.

## STARTING MICROSOFT EDGE

You can start Microsoft Edge to browse through the information on the web.



1. Click on **Start** icon to open Start menu (or press **Windows** key).
2. Click on **Microsoft Edge**.
- You can also open Microsoft Edge by clicking on its icon on the taskbar.

**Microsoft Edge** window appears.

*If you are not currently connected to the Internet, a dialog box appears that allows you to connect.*

3. When you finish browsing through the information on web, click on **Close (x)** button to close the Microsoft Edge window (or press **Alt+F4**).



## DISPLAYING A SPECIFIC WEBSITE/WEB PAGE

You can display any page on the web that you have heard or read about. You need to know the **address** of the web page that you want to view. Each page on the web has a unique address called **Uniform Resource Locator (URL)**.

When Edge is used for the first time, it does not have an address box. You can type a website address into the Search box.



1. Click on **address bar** and start typing the address of the web page/website you want to display.



- As you type, Edge displays suggestions from the pages recently visited. If you find what you are looking for, click it to save your time in further typing.
2. You can ignore the suggestions, and continue to type and then press **Enter** key.



The web page/website appears on your screen.



### Update Your Knowledge

There is a star icon at the top of each web page. Clicking on this will provide you with two options—assign the page to your **Favorites** folder and save it to the **Reading list**.



### Do You Know?

If the address uses the form **http://www.microsoft.com**, type just the **microsoft** part, and then press **Ctrl + Enter**. Microsoft Edge automatically adds **http://www.** at the beginning and **.com** at the end.



# Guidelines for Online Safety

While using the Internet and working on your **personal accounts** (e-mail, social networking, banking, e-commerce, etc.), you need to be careful and follow these guidelines:

## CHOOSE STRONG PASSWORD

Just as you buy good quality locks for your home so that nobody can enter without its key, you should also choose a strong password for your personal account. **Passwords** are the keys to your accounts—only the person with the key can access them.

Any person may try to guess your password. So, you should make a password that is unique, strong, and not easily guessed by strangers or those close to you.



## NEVER STORE YOUR PASSWORD

Whenever you open an account, the browser prompts you to save your password so that you do not need to type it each time you visit the same website. You should never save the password. If you do it, then anyone who uses your computer can easily go through your personal account.

## NEVER OPEN UNTRUSTED EMAIL

You should never open an email message with **attachment** or a **link** unless you are expecting it, or it is from a trusted source or the person you know. It can contain virus which is dangerous for your computer.



## USE ANTIVIRUS

You should install a good **antivirus** program and scan the entire computer, so that it gets free of viruses and other potential data attacks from time to time. You should update the antivirus program regularly.



### Update Your Knowledge

**Antivirus** is a software that is used to detect and remove viruses from a computer. It also protects your computer against a wide variety of threats.

## NEVER SHARE YOUR PERSONAL INFORMATION

You should never share your personal information such as your name, home address, telephone number, school name, your parents' office address, etc. to any stranger on the Internet.

## USE PRIVATE OR INCOGNITO MODE

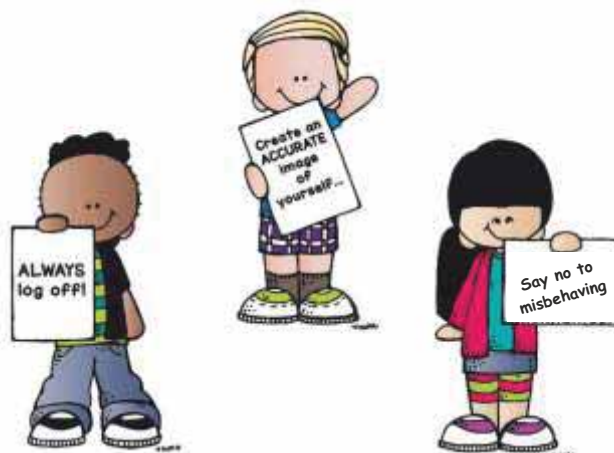
Always use **private browsing** while using the Internet at public places like an Internet cafe. By using private mode, your browser will not store passwords, temporary Internet files, and data entered by you when you exit the browser.



## Responsibilities of a Digital Citizen

If you are using the computer as well as the information generated by it, then you are a **digital citizen**. Some of the responsibilities of a digital citizen while using computer are:

1. Use your computer for educational purpose only when you are at school.
2. Keep your computer safe and secure all the time.
3. Visit appropriate websites that promote learning and are for educational purpose when you use Internet.
4. Never share your private information.
5. Always log out after completing your work and do not share your password with anybody.
6. Respect others by using kind and courteous words when you are online. Make sure that your words do not harm others.
7. Say 'no' to misbehaviour when you are online. You must inform an adult if someone is bullying or teasing.



## In a Nutshell



- Internet is the largest network that connects millions of computers across the world.
- ARPANET was the first network of computers in the world.
- ISPs allow us to use Internet for a monthly charge.
- Search engine is used to search a particular information through the collection of web pages.
- Web browser is used to browse the Internet and open the web pages.
- Microsoft Edge is the default web browser of Windows 10.
- We should be careful while using the Internet and working on our personal account.



## Exercises

### A. Tick [✓] the correct answer.

1. The history of the Internet starts with the birth of ..... .  
 a. ARPANET ☐    b. Intranet ☐    c. Website ☐
2. .... is a high-speed Internet connection.  
 a. Mosaic ☐    b. Broadband ☐    c. Modem ☐
3. The company that provides Internet connection is called ..... .  
 a. IPS ☐    b. ISP ☐    c. SPI ☐
4. .... is the latest web browser of Windows 10.  
 a. Google Chrome ☐    b. Microsoft Edge ☐    c. Mozilla Firefox ☐
5. .... is the unique address of each web page.  
 a. WWW ☐    b. URL ☐    c. ISP ☐

### B. Write 'T' for True and 'F' for False statements.

1. All information available on the Internet is accurate. ☐
2. Many search engines use spider program. ☐
3. Hotmail is a popular web browser. ☐
4. We should always choose strong password to protect our account. ☐
5. We should always open an email message with attachment. ☐
6. We should never share our personal information with a stranger on web. ☐

**C. Fill in the blanks.**

1. In 1969, the Department of Defense of the USA developed .....
2. .... enables us to send and receive messages at a fast speed.
3. A ..... is any web page name that lists as a result of a search.
4. .... was the first successful graphical web browser.
5. We should use ..... browsing while using the Internet at public places.

**D. Define the following.**

1. Search engine: .....
2. Web browser: .....

**E. Answer the following questions.**

1. What are the advantages of Internet?  
.....  
.....  
.....
2. Name the different types of equipment required to connect to the Internet.  
.....  
.....
3. Name the different web browsers available on the Internet.  
.....  
.....  
.....
4. Why should we choose strong password for our personal account?  
.....  
.....
5. Write three responsibilities of a digital citizen.  
.....  
.....  
.....

**F. Application-based Question**

Shweta has to send her birthday invitation to her family and friends through e-mail. She goes to a cyber cafe for sending the e-mails. Tell her the mode with which she should use Internet in public area securely.

.....



# Activity Section

## Activity Online Safety

**Rishabh was chatting with a stranger on the Internet in a cyber cafe. He revealed his address and phone number to the stranger.**

- Did he do the right thing? .....
- What would you do if you were in his place? .....

## Online Activity

**Open website [www.nineplanets.org](http://www.nineplanets.org) using either browser or search engine.**

### Using Web Browser:

- Open **Microsoft Edge** and enter the web address or URL [www.nineplanets.org](http://www.nineplanets.org) in the address box.
- Press **Enter** key to open the website. Collect information and make a Word file.

### Using Search Engine:

- Open **Microsoft Edge** and enter the web address or URL [www.google.co.in](http://www.google.co.in) in the address box.
- Press **Enter** key to open Google website which is a search engine.
- Enter the keyword '**Nine Planets**' in the search box and press **Enter** key. A list of websites will be displayed which contains the information about the nine planets.
- Click on '**The Nine Planets Solar System Tour**' link to open the website. Collect the information and make a Word file.

### Skill Formation

- This activity enhances
- the information-searching
- skills of the students.

### Subject Integration

#### EVS

The information available on the website suggested in the activity would enhance the knowledge of students about planets and other object in space. ....

## Group Discussion

**Divide the class into two groups and discuss the topic – 'Safe Ways of Surfing the Internet'.**

## Online Link

To learn more about Internet, visit the website:

[https://www.tutorialspoint.com/internet\\_technologies/internet\\_overview.htm](https://www.tutorialspoint.com/internet_technologies/internet_overview.htm)

# Step-wise Thinking

**OBJECTIVES**

After completing this chapter, you will be able to:

- Understand step-wise thinking
- Learn to solve real-life situations through case study.
- Understand reasoning and its applications.

Dear Friends, everyday we have to do various tasks which require just two things: Step-by-step procedure and Reasoning.



## Introduction

In your day-to-day life, to solve any problem or doing any work, you follow step-wise thinking and reasoning for best results.

**Step-wise thinking** is a step-by-step procedure to try to find solution to any problem or task.

Let us consider your routine task of getting ready for the school.

- |               |   |                                 |
|---------------|---|---------------------------------|
| <b>Step 1</b> | : | Wake up in the morning          |
| <b>Step 2</b> | : | Go to washroom                  |
| <b>Step 3</b> | : | Brush your teeth                |
| <b>Step 4</b> | : | Take a bath                     |
| <b>Step 5</b> | : | Wear your school uniform        |
| <b>Step 6</b> | : | Have your breakfast             |
| <b>Step 7</b> | : | Take your tiffin and school bag |
| <b>Step 8</b> | : | Go to your school               |

If you do not follow these steps in sequence, you will be unable to perform the required task. For example, if we replace step 7 with step 3, it will not work properly. It proves that every problem or task has a procedure to solve or do it.

In this chapter, we will consider some interesting and useful solutions to the everyday problems.

## Step-wise Thinking

**Step-wise thinking** is a kind of thinking activity with a purpose or goal in mind. The step-wise instructions help in completing a task easily and efficiently. Every activity can be performed by following a sequence of steps.

In the same way, computer follows out instructions and works accordingly in a step-by-step manner. It takes instructions from an **input** device, **processes** it and then gives the result on **output** device. This process is called IPO (Input – Process – Output). It also solves the problems in a step-by-step procedure to give you accurate results.

Let us consider an interesting and useful case study of a real-life situation with its solution and understand how it can be solved in a step-wise manner.

## Case Studies

Suppose you have to celebrate your birthday at home with your friends and cousins. How will you organize everything for the birthday party?

### Solution

To organize the birthday party at home for your friends and cousins, you have to plan everything in a step-by-step manner.

Follow these steps to organize the birthday party.

- Step 1** : Thinking and planning in advance about the birthday party
- Step 2** : Preparation of invitation cards
- Step 3** : Printing of the invitation cards
- Step 4** : Distribution of invitation cards
- Step 5** : Organising everything a day before the party
- Step 6** : Getting ready for birthday party
- Step 7** : Welcoming the guests
- Step 8** : Engaging the guests in a variety of games and activities
- Step 9** : Cake-cutting ceremony
- Step 10** : Dinner and farewell

Given below is the explanation of steps which should be followed for a wonderful birthday party at home.

## **STEP 1:**

### **Plan in advance to organise party**

First of all, you and your parents will plan to organize a party on your birthday at your home. You will also finalize the list of guests which includes your friends and cousins.



## **STEP 2:**

### **Prepare invitation cards**

In the second step, you will prepare an invitation card. For preparing an invitation card, you will write the contents in a word processing software and make it attractive by applying different fonts, colors and background styles. It will include details about day, date, time and venue of the party.

## **STEP 3:**

### **Print the invitation cards**

In this step, you will print the invitation cards for the guests you want to invite by using a color printer.



## **STEP 4:**

### **Distribution of invitation cards**

In the fourth step, you should request your teacher to permit you to distribute the invitation cards among your friends in the class. You can ask help of your parents to distribute invitation cards to your cousins.

## **STEP 5:**

### **Organize everything a day before the party**

In the fifth step, as your parents make arrangements for your birthday party at home, you should also help them in managing things such as cleaning up of drawing room, balloon and streamer decoration, bringing all other things necessary for the party.







## STEP 6: Get ready for party

In the sixth step, you should get ready for your birthday party by wearing a new dress. You can also wear a decorated birthday cap.

## STEP 7: Welcome your guests

In the seventh step, you will welcome your guests with a smiling face and kind gesture.



## STEP 8: Engage guests in a variety of games and activities

In the eighth step, you can use your computer to engage your guests in playing games, listening to music, singing and dancing.

## STEP 9: Cake-cutting ceremony

In this step, gather all your guests near the cake table. Your parents will decorate the cake with candles and light them. Then, come in front of the cake with a cake-cutting knife. Blow the candles first and then cut the cake. Everybody will clap and give you blessings and gifts one-by-one.



## STEP 10: Dinner and farewell

In this final step, you will invite your guests for dinner at the dining table. After dinner, you will give return gifts to your guests and say good-bye to them.

The above-mentioned steps will ensure that you have a wonderful birthday celebration. You should plan your birthday celebration in a step-wise manner; it will be a memorable celebration for everyone.

## Reasoning

**Reasoning** is the ability of the mind to think and understand things in a logical way, in order to get a result or conclusion. Reasoning skills are essential in our day-to-day life. We use them to make choices among possible options, distinguish between positive and negative situations, decide how to approach a problem and solve it, and do much more.

Suppose, you have been invited to your society's **painting competition**, but you also have to learn for your **Computer class test**. This requires reasoning, since you must consider the two choices and try to balance fun-activity with class test.

Let us understand reasoning with the help of some examples.

### Example 1

Look at the following arrangement of boxes.

5	11	17	33	7	9	22	38	6	8	32	?
---	----	----	----	---	---	----	----	---	---	----	---

If you observe the pattern, you will find that the last box in every set contains a number which is the sum of the first three numbers. Therefore, in the last set, the fourth box will have  $6 + 8 + 32 = 46$ .

### Example 2

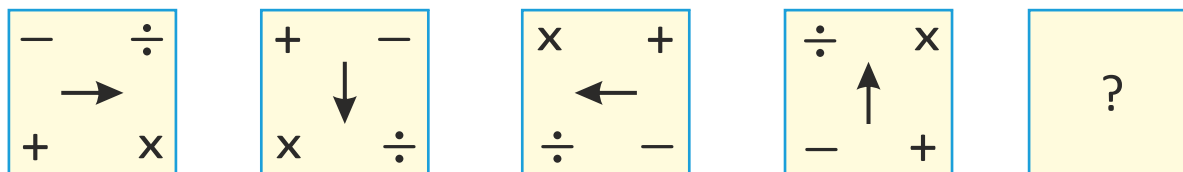
Look at the following pattern.

a a a a a	a a a a b	a a a b b	a a b b b	?
-----------	-----------	-----------	-----------	---

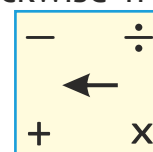
In the arrangement, letter **a** is changing to letter **b** from the right. Therefore, the last set of pattern will be **a b b b b**.

### Example 3

Observe the following picture puzzle.



In this puzzle, the arrow in the middle moves **90° clockwise** in every step. At the same time, the mathematical symbols are also moving clockwise from one step to another. Therefore, the next step in the pattern will be



## In a Nutshell



- Step-wise thinking is a procedure to try to find solution to a problem or task.
- Computer follows our instructions and works accordingly in a step-by-step manner.
- If we solve a problem in a step-by-step procedure, it will give accurate result.
- Reasoning is the ability of the mind to think and understand things in a logical way in order to get a conclusion or result.



## Exercises

### A. Mark the correct steps of the following procedure.

Your mother had just made a pan full of lentils (*dal*) when she got an urgent phone call. She had to go somewhere urgently. Now, you are feeling hungry but neither you nor your elder brother know how to cook rice. You called up your elder sister to know the steps to boil rice. Steps to cook rice are given below in a jumbled-up order. Mark the correct order to help your elder brother cook rice.

- Use a wooden spoon to stir once.
- Pour some fresh water and bring it to boil in pan.
- Cover the pot tightly with a lid.
- Add rice to the boiling water.
- Gently fluff the rice with a fork.
- Cover pot and let rice simmer for about 15 minutes.

☐  
☐  
☐  
☐  
☐  
☐

### B. Match the following.

Ram had ₹20. He did some work at home and his parents gave him some money as a reward. Now, he has ₹35. Arrange these steps to find out how much he earned as a reward from his parents.

#### Steps

- Step 1
- Step 2
- Step 3
- Step 4
- Step 5

#### Solution

- Ram earned  $35 - 20 = ₹15$  as reward.
- $20 + \text{reward} = ₹35$
- He got reward.
- Now, he has ₹35.
- Ram had ₹20.

**C. Write 'T' for True and 'F' for False statements.**

1. It is difficult to solve a problem in a step-wise manner. ☐
2. You should cross the road only on zebra crossing. ☐
3. After the assembly, first period starts in the school. ☐
4. You had 16 apples. Out of which, you gave 7 to your brother. Now you have 10 apples with you. ☐

**D. Complete the following steps that convey the procedure of starting MS-Paint program using Start menu.**

1. Click on ..... icon. The Start menu appears.
2. Click on ..... .
3. Click on ..... .

**E. Answer the following questions.**

1. What is stepwise thinking?

.....

.....

2. What is reasoning?

.....

.....

## Activity Section

### Activity Logical Reasoning

1. If the letters in the word UNDERTAKING are re-arranged in the alphabetical order, which one will be in the middle after the re-arrangement?

a. G ☐ b. I ☐ c. K ☐ d. N ☐

2. If the following words are arranged according to the dictionary order then what will be the second word in that order?

Expose, Expulsion, Export, Expound, Exposure

a. Expose ☐ b. Expound ☐ c. Expulsion ☐ d. Export ☐

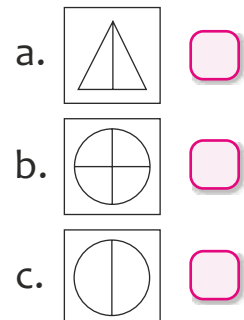
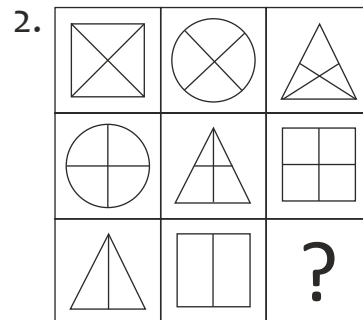
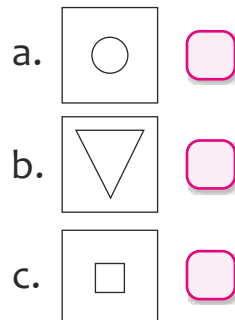
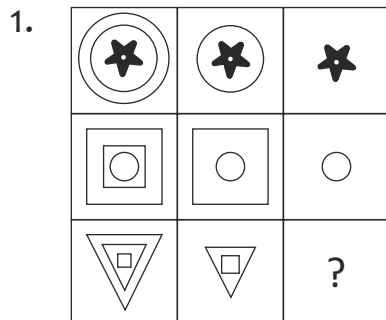
3. Look at the series: 2, a, 3, e, 4, i, 5, ..... . Which alphabet should come next?

a. d ☐ b. u ☐ c. h ☐ d. o ☐



## Activity Mental Ability

Tick (✓) the correct missing image.



## Activity Mental Maths

- What are the two numbers having a sum of 9 and a difference of 1?
 

a. 4 and 5 ☐ b. 6 and 7 ☐ c. 6 and 3 ☐ d. 2 and 7 ☐
- A piece of rope measuring 4 m is cut into 8 equal lengths. How long will each piece be?
 

a. 40 cm ☐ b. 20 cm ☐ c. 80 cm ☐ d. 50 cm ☐
- What is  $\frac{1}{3}$  of 21?
 

a. 9 ☐ b. 11 ☐ c. 7 ☐ d. 13 ☐

## Activity Analogy

- 'Ankle' is to 'Knee' as 'Wrist' is to
 

a. Hand ☐ b. Foot ☐ c. Elbow ☐ d. Finger ☐
- 'Bird' is to 'Fly' as 'Snake' is to
 

a. Walk ☐ b. Fly ☐ c. Bark ☐ d. Crawl ☐
- 'Light' is to 'Sun' as 'Heat' is to
 

a. Fire ☐ b. Electricity ☐ c. Star ☐ d. Moon ☐
- 'Face' is related to 'Expression' in the same way as 'Hand' is related to
 


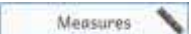

a. Work ☐ b. Handshake ☐ c. Gesture ☐ d. Waving ☐

## Activity Coding and Decoding

- If CARPET is coded as TCEAPR, then the code for NATIONAL would be  
a. NLATNOLI ☐ b. LANOITAN ☐ c. LNAANTOI ☐ d. LNOINTAA ☐
- If PICTURE is coded as tuvwxzy, then PIERCE would be coded as  
a. tuzyzv ☐ b. tzuvzy ☐ c. tuzyvz ☐ d. tzuvyz ☐
- If D = 4, COVER = 63, then BASIS =  
a. 54 ☐ b. 55 ☐ c. 40 ☐ d. 50 ☐

## Lab Activity

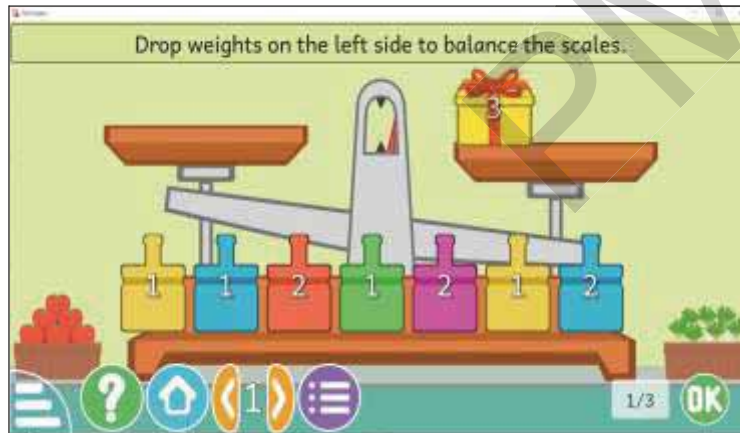
**Open the Educational Suite GCompris [  ].**

- Click on this icon [  ].
- Click on **Measures** [  ].
- Click on **Balance the scales properly** [  ].

### Subject Integration

#### Mathematics

This integration would make students learn arithmetic equality and improve mental calculation.



## PLAYING METHOD

You can play this game by dragging and dropping weights to the left or right side to balance the scales. The weights can be arranged in any order.

Your level of game keeps on increasing after you balance the scales correctly in each stage.

## Group Discussion

**Discuss the topic – 'How does Step-wise Thinking Improve our Working Capabilities?'.**

## Online Link

To learn more about step-wise thinking, visit the website:

<https://sway.office.com/CJ85cEeDGHKl1obi?ref=Link>

# More About Scratch 3

## OBJECTIVES

After completing this chapter, you will be able to:

- Understand about Scratch and its elements.
- Generate new sprite using different methods.
- Learn about sprite stage and how to change its background.
- Work with two sprites and create event-based programming.
- Understand forever block and saving a project.

In your previous class, you learnt about Scratch 3, a free visual programming language. In this chapter, you will learn some more interesting things about Scratch.



## Scratch

Scratch is a simple, fun-based visual programming language designed by the **Lifelong Kindergarten Group** at **MIT** (Massachusetts Institute of Technology) to introduce some basic programming concepts in an interactive manner.

**Scratch** is fairly easy for anyone to learn with fun. All commands are on the screen, so you can just drag and drop them. It also includes **graphics** and **sounds** and enables you to quickly see results of your work.

## SPRITES

Scratch projects are made up of small objects called **sprites**. You can change how a sprite looks by giving it a different **costume**. You can choose your sprite to be an animal, a person, a food item, a sport, etc. You can use any image as a sprite: an image drawn in the Paint editor, image uploaded from your computer or an image dragged from a Library.



## SCRIPTS

You can give **instructions** to a sprite, telling it to move or interact with other sprites. To tell a sprite what to do, you snap together the given blocks into stacks called **scripts (program)**.



## BLOCKS

**Blocks** are color-coded by category. These blocks are dragged to script area for coding sprite or stage. There are nine block categories.



**Motion Blocks** define the movement of sprites.

**Looks Blocks** change the appearance and costumes of sprites.

**Sound Blocks** control the playback and volume of audio file and musical notes.

**Events Blocks** are used to control events and the triggering of scripts.

**Control Blocks** control the execution of script based on predefined event.

**Sensing Blocks** let multiple sprites interact with themselves.

**Operators Blocks** perform mathematical functions within the project.

**Variables** are used to store data, like name, in projects.

**My Blocks** are used to create your own blocks.

## TYPES OF BLOCK SHAPES

There are six different block shapes: **Hat**, **Stack**, **Boolean**, **Reporter**, **C** and **Cap**.

**Hat blocks** are used to start every script. These blocks have a rounded top and a bump at the bottom. You can place other blocks only below them.

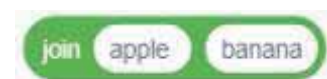
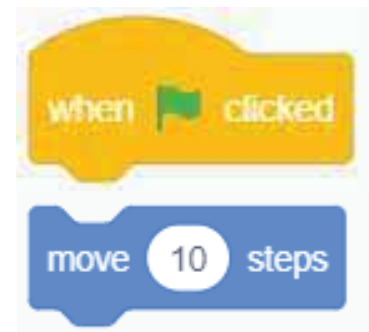
**Stack blocks** are used to perform the main commands. These blocks have a notch at the top and a bump at the bottom. You can place other blocks above as well as below the stack block.

**Boolean blocks** are used in conditions that are either true or false. In Scratch, the boolean blocks are of hexagonal shape.

**Reporter blocks** are used to hold values in the form of numbers and strings. These blocks have rounded edges.

**C blocks** are also known as **Wrap blocks** which have a shape of 'C' alphabet. C block has a notch on the top and a bump at the bottom. You can place other blocks inside the C block.

**Cap blocks** are used to end the scripts. These blocks have a notch at the top and a flat bottom. You cannot place any block below them.





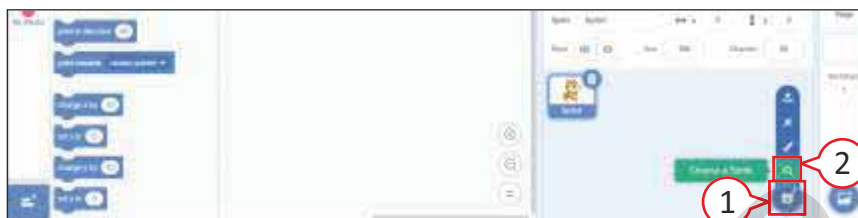
# Adding a New Sprite

In Scratch, cat is the default sprite; but you can create a new sprite or import more sprites from the Library in your project. Scratch provides four different options for adding sprite to your applications. These options are accessed through the **Choose a Sprite** button. Let us add a new sprite from these options.



## CHOOSING SPRITE FROM LIBRARY

Scratch provides access to different collections of graphic files that you can add to your Scratch applications as sprites.

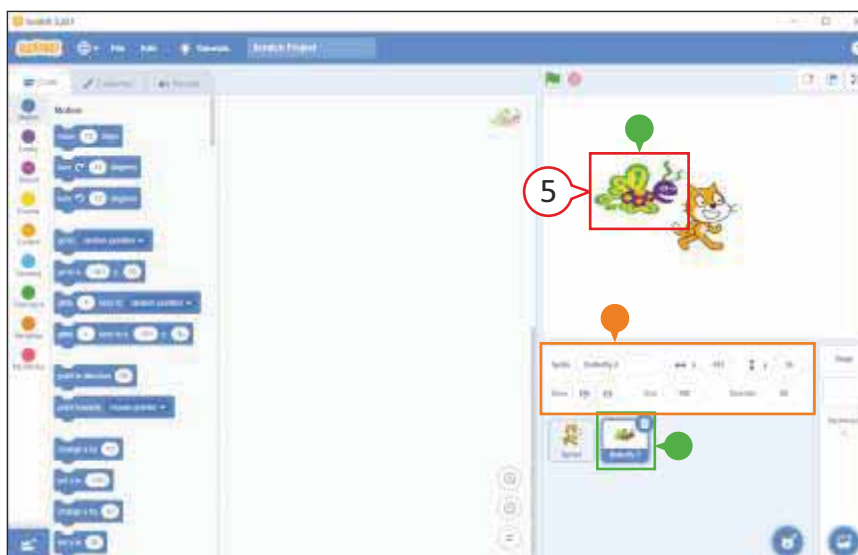


1. Click on **Choose a Sprite** button.
2. Click on **Choose a Sprite** option.



**Choose a Sprite** window appears.

3. Select a **Category** for the sprite. By default, **All** is selected.
4. Click on the sprite you want to add.



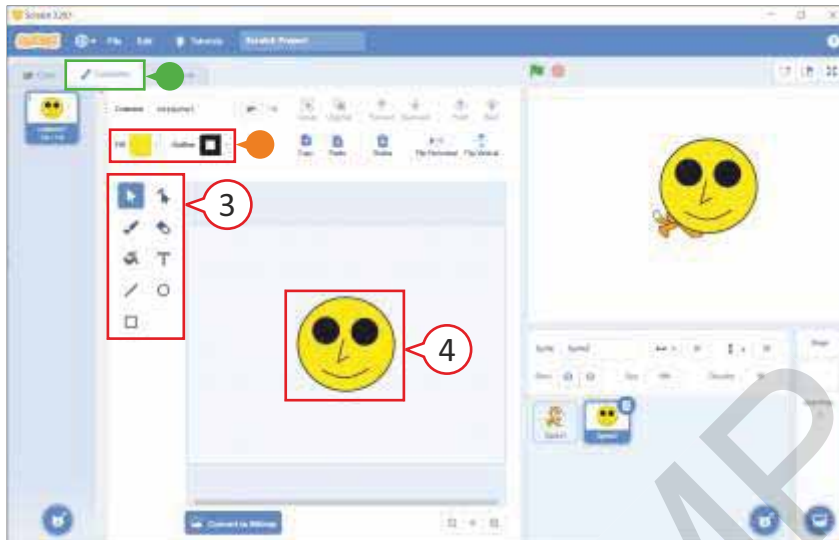
- Your new sprite is added to the **Sprites List** and is also displayed on the **stage**.
  - You can use the buttons of **Sprite Info** pane and give sprite a new name and change its directions too.
5. Drag the sprite to the place where you want it on the stage.

## PAINING OR CREATING NEW SPRITE

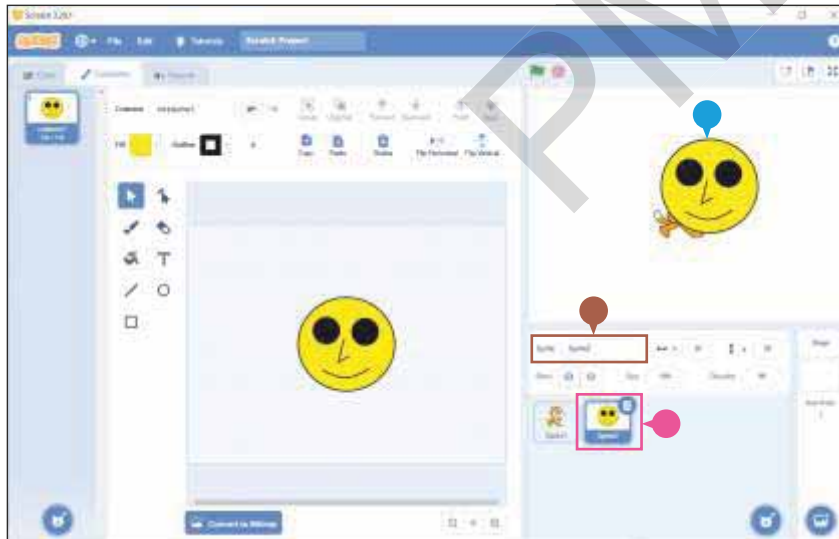
By using **Paint** button, you can create a new sprite for your project.



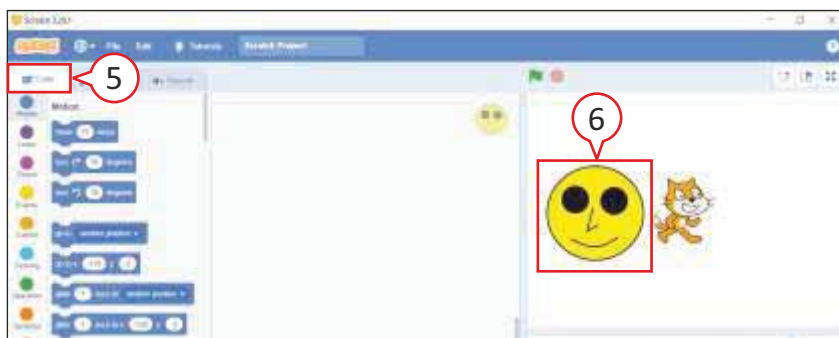
1. Click on **Choose a Sprite** button.
2. Click on **Paint** option.



- The **Costumes** tab appears that can be used to create new sprites with the help of tools from the toolbar and Color Palette.
- 3. Click on the **drawing tools** from the toolbar.
- 4. Draw the sprite on the canvas.
- You can use different colors and apply a range of special effects.



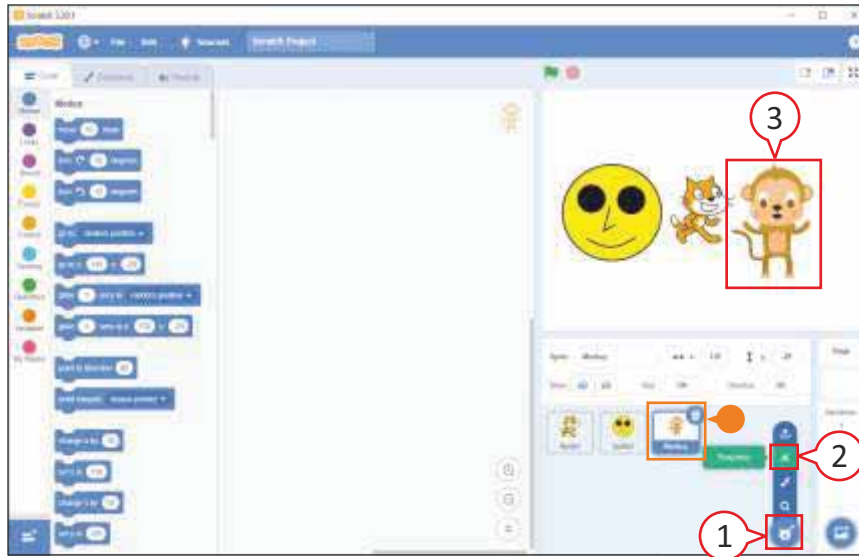
- The new sprite is added on the stage with a name **Sprite2**.
- The new sprite also appears in the **Sprites List** area.
- You can use the **Sprite** text box and give sprite a new name.



5. Click on **Code** tab to return to the Script view.
6. Drag the sprite to the place where you want it on the stage.

## GETTING SURPRISE SPRITE

The **Surprise** option randomly selects one sprite from the **Choose a Sprite** button and adds it to your application project.



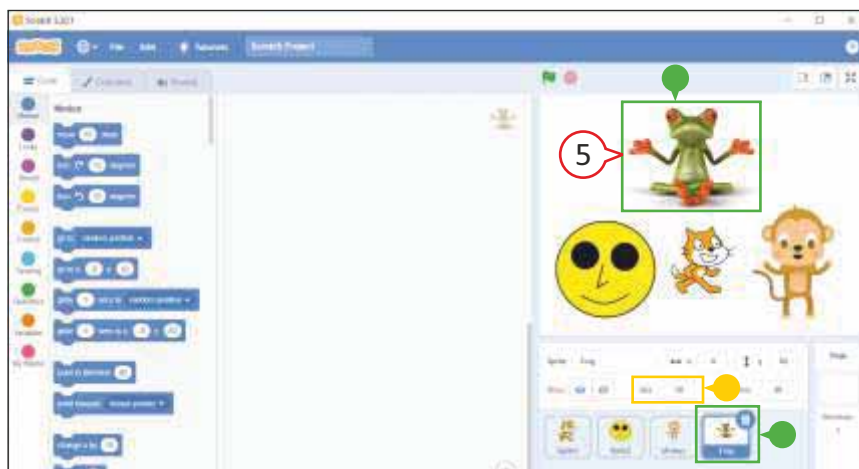
1. Click on **Choose a Sprite** button.
2. Click on **Surprise** option.
- Your new randomly selected sprite is added to the **Sprites List** as well as displayed on the stage.
3. Drag the sprite to the place where you want it on the stage.

## UPLOADING SPRITE FROM FILE

You can upload any image as sprite from the file stored on your computer.



3. Navigate the file you want to upload as a sprite and click on it.
4. Click on **Open**.



- The new sprite is added on the stage as well as in **Sprites List** area.
  - You can use the **Size** option to grow or shrink the size of the new sprite.
5. Drag the new sprite to the place where you want it on the stage.



## DELETING SPRITE

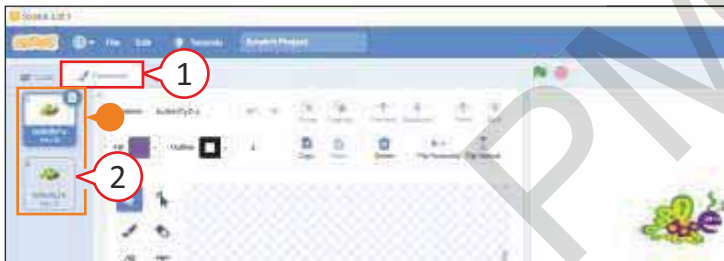
You can delete the sprite from the stage if you no longer need it in your project.



1. Click on the sprite icon you want to delete from the **Sprites List** area.
  - **Delete** [🗑️] button appears on the upper right corner of the icon.
  2. Click on **Delete** [🗑️] button.
- The sprite gets removed from the stage.

## CHANGING THE COSTUME OF SPRITE

You can change how a sprite looks by giving it a different **costume**. It can have one or more costumes, allowing it to change its appearance as the application executes. The sprite must have at least one costume. For example, the cat (default sprite) has two costumes. Each costume is assigned a unique name and number. In this example, we have selected **butterfly** as a sprite. It also has two costumes.

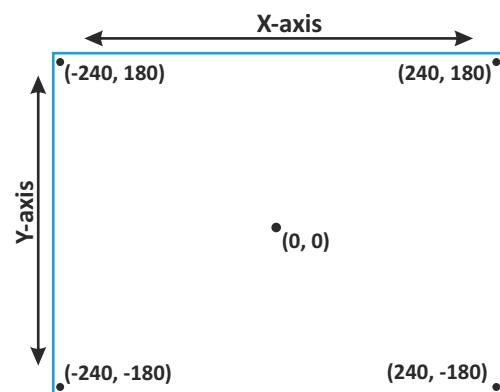


1. Click on **Costumes** tab.
- You will see **butterfly2-a** and **butterfly2-b** costumes under the butterfly sprite's costume list.
2. Click on **butterfly2-b** costume.

The new sprite costume is added on the stage as well as in the Sprites List area.

## Sprite Stage

The **stage** provides the canvas upon which sprites are displayed and interact with one another. The stage is 480 units wide and 360 units high. As you can see, the X-axis runs from coordinates 240 to -240, and the Y-axis runs from coordinates 180 to -180. The middle of the stage has a coordinate location of (0, 0). Scratch keeps you informed of the pointer location whenever it is moved over the stage by displaying its (X, Y) coordinate position in the mouse x: and mouse y: fields, just beneath the bottom-right side of the stage.





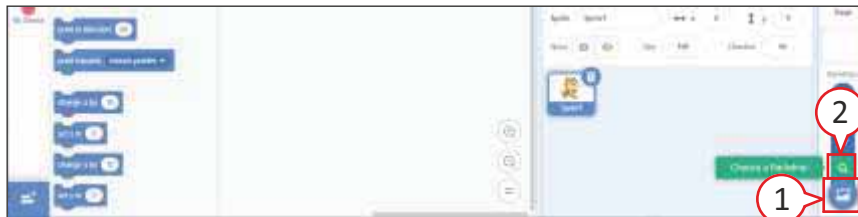
## CHANGING THE BACKDROP OF STAGE

By default, the background of the stage is white. You can change the background of the stage to make it look more interesting and lively.

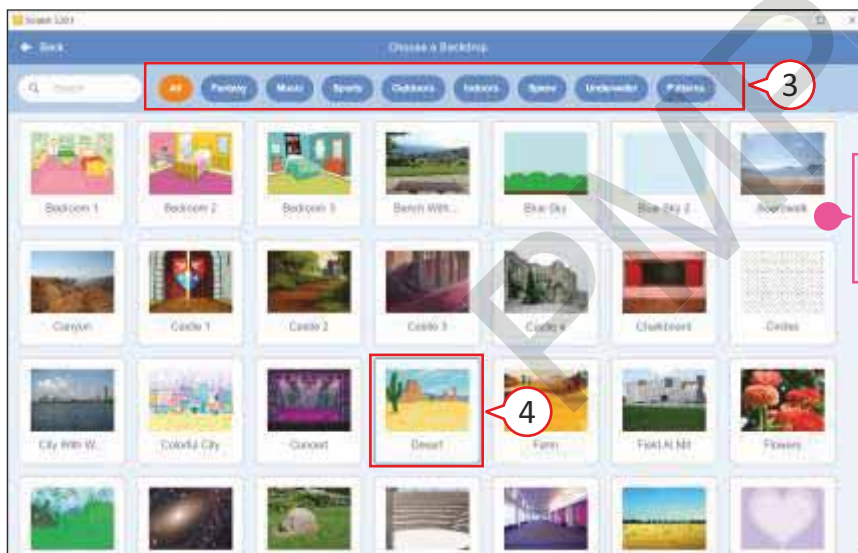
The **Choose a Backdrop** button is used to change the background of the stage. By using **four** available icons from this button, you can choose a backdrop from the library, paint a new backdrop, randomly select one backdrop from the library and upload a backdrop from the file stored in your computer.



### Choose a Backdrop from Library

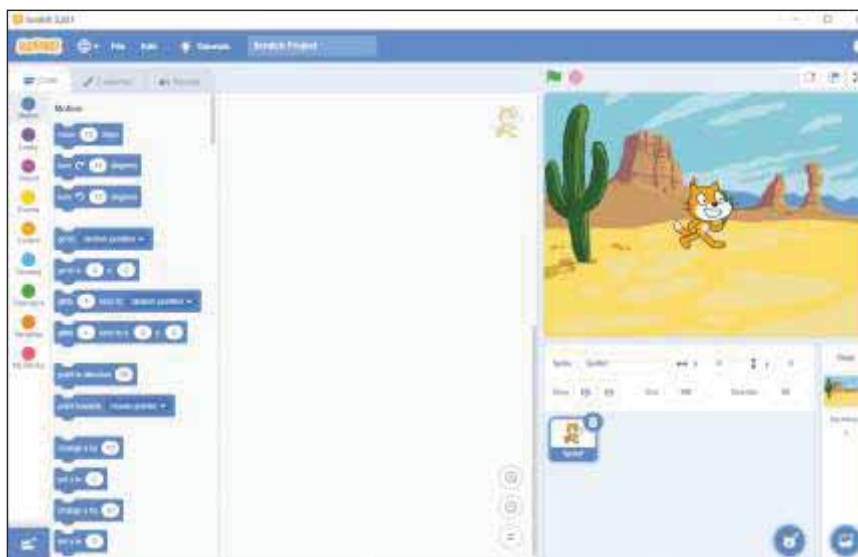


1. Click on **Choose a Backdrop** button.
2. Click on **Choose a Backdrop** option.



**Choose a Backdrop** window appears.

3. Select the **category** for the backdrop. By default, **All** is selected.
- You can use the scrollbar for more backdrop options.
4. Click on the backdrop you want to add.



New backdrop is added to the stage, right behind the cat (sprite).

# Project: Make the Cat Walk and Promote Covid Appropriate Behaviour



**Start**

## Skill Formation

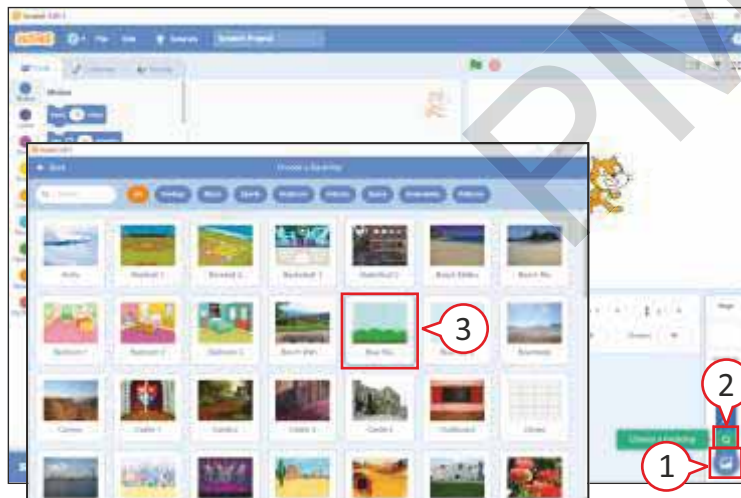
- This activity will
- infuse a life skill to
- prevent the spread of coronavirus.



## CREATING A PROGRAM

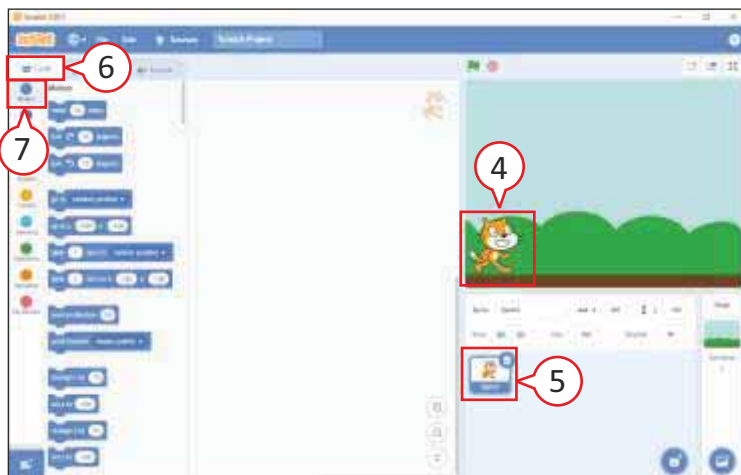
When you click blocks in the Blocks Palette, the sprite moves immediately; it only tests what blocks do, but it is not a program. A **program** is a set of repeatable instructions that you can store up to carry out later.

The **Script Area** is a place where you make your programs by dragging the blocks from Blocks Palette and dropping them on top of each other.



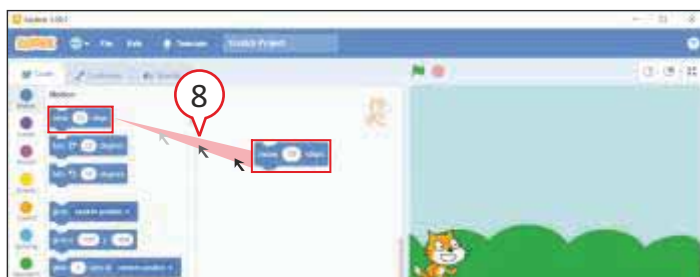
1. Click on **Choose a Backdrop** button.
2. Click on **Choose a Backdrop** option.
3. From the **Choose a Backdrop** window, click on the **Blue Sky** backdrop.

*New backdrop is added to the stage.*



4. Drag the sprite (cat) to the place where you want it in the project.
5. Click on the cat in the Sprites List.
6. Click the **Code** tab.
7. Click the **Motion** block button.

*For making a program, you have to drag the blocks into the Script Area from the Blocks Palette.*



8. Select **move 10 steps** block and drag it from the Blocks Palette into the Script Area using the mouse.

This first block moves the cat 10 steps in the direction of its face.



9. Click the **Looks** button.
10. Select **next costume** block, drag it into the Script Area, and place it underneath the **move 10 steps** block.

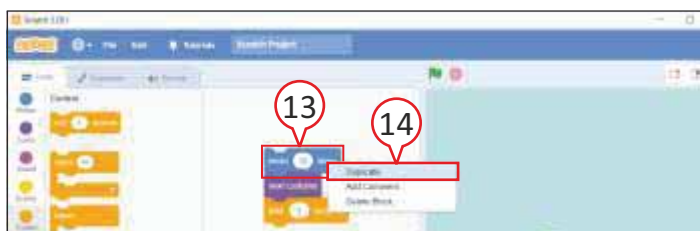
The blocks snap together. These joined-up blocks are called **script** or **program**.

The **next costume** block will make the cat's legs move, which appears like it is walking.



11. Click on the **Control** button.
12. Drag the **wait 1 second** block into the Script Area and snap it under the second block.

This block adds a 1-second delay. Without it, the cat will change the costume very fast. Slowing the cat down enables us to see the effect of legs moving.



13. Right-click the **move 10 steps** block. A menu appears.
14. Click on **Duplicate**.

This copies the first block and other blocks underneath it. In this example, it copies the **move**, **next costume** and the **wait** blocks.

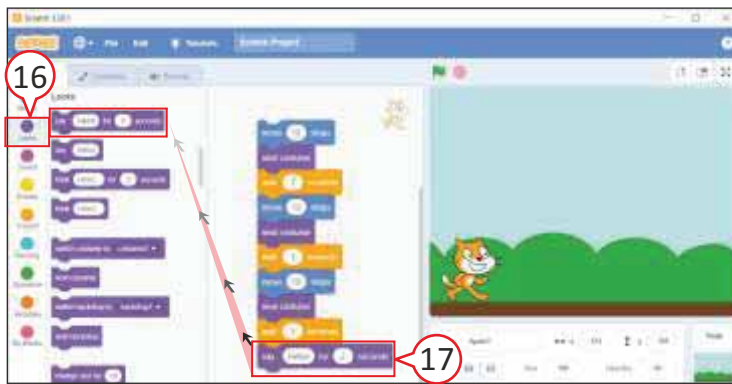


15. Move the duplicated blocks to the bottom of your program and click to place the blocks there.

You can repeat the steps 13 to 15 several times to make the cat walk further.

Now, let us make the cat say something at the end.





16. Select **Looks** button.

17. Drag the **say Hello! for 2 seconds** block into the Script Area and snap it under the last block.



18. Replace the text **Hello!** with **Maintain distance, wear a mask.**

## RUNNING THE PROGRAM



1. Click on any of the joined-up blocks in Script Area.

- Scratch carries out all the joined-up instructions in order, starting from the top and working its way down the blocks.



Friends, your project is now complete. It is a good practice to save it.

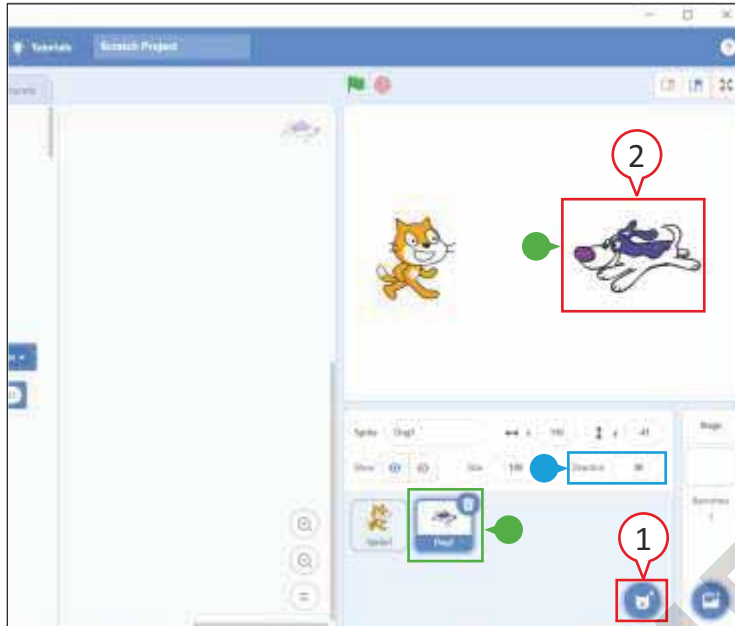





# Working with Two Sprites

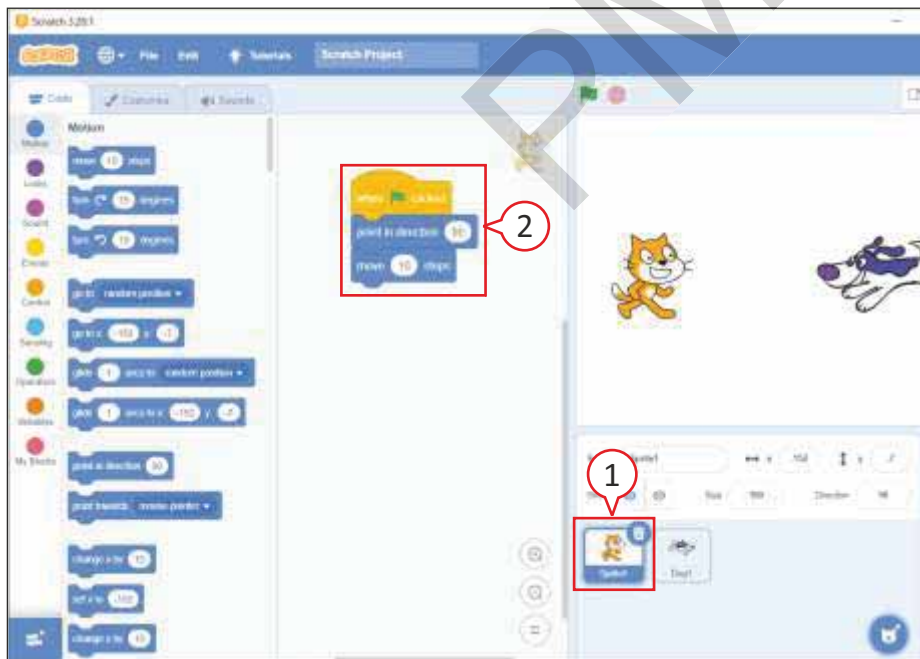
In Scratch, you can work with more than one sprite on the stage.

## ADDING A SPRITE

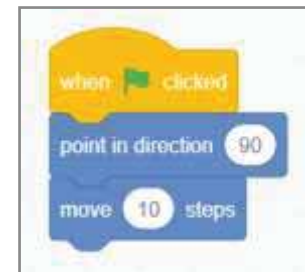


1. Add one more sprite on the stage by clicking on **Choose a Sprite** button.
  - Your new sprite (Dog1) is added in the **Sprites List** as well as on the stage.
  - You can rotate the sprite by using **Direction** box. 
2. Drag the new sprite to the place where you want it on the stage.

## CREATING SCRIPT FOR THE SPRITE



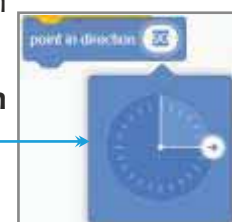
1. In the **Sprites List**, click on the **sprite icon** (Sprite1) for which you want to create a script.
2. Create a script (program) in the **Script Area** for the selected sprite.



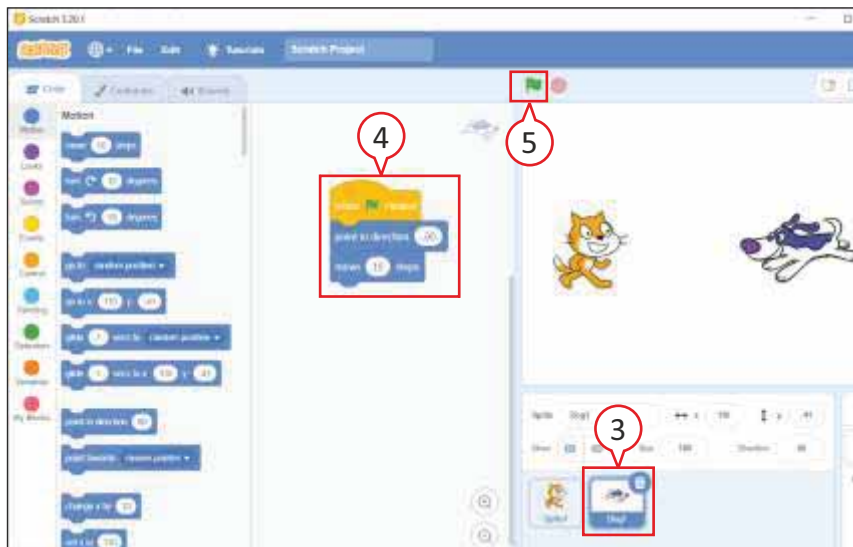
In the above script, first we have inserted **Flag** block from **Events** block menu on the stage.

Then, we have added **point in direction** block from **Motion** block and set the option to **90** which is in right direction.

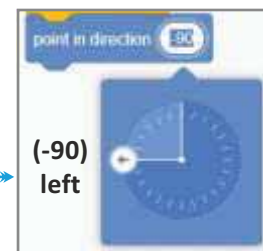
Next, we have added **move 10 steps** block from **Motion** block.



(90)  
right



3. In the **Sprites List**, click on the **sprite icon** (Dog1) for which you want to create a script.
4. Create a script (program) in the **Script Area** for selected sprite.



In the above script, first we have inserted **Flag** block from **Events** block menu on the stage.

Then, we have added **point in direction** block from **Motion** block and set the option to **-90** which is in left direction.

Next, we have added **move 10 steps** block from **Motion** block.

5. Click on Green Flag [ ] button to start your main program. You will observe that both the sprites move 10 steps toward each other.

Keep clicking on Green Flag. On every click, Scratch executes all the joined-up blocks of both sprites, again and again and you will observe both the sprites coming closer to each other.

## Event-based Programming

**Event** is an action or occurrence detected by a program. Events can be user actions, such as clicking a mouse button or pressing a key, or system occurrences, such as running out of memory.

**Event-driven programming** is a programming paradigm in which the flow of program execution is determined by events.

**When icon clicked** is also an Event block. This block triggers the particular blocks of codes, so that the program executes in a certain way.

**Make the sprite change its costume and move while clicking particular keys.**



1. Click the **Code** tab.
2. Click the **Events** button.
3. Select **when () key pressed** block and drag it into the Script Area.



4. Click on **down arrow** button.

A pop-up menu appears.

5. Click on the particular key you want to choose.

In this example, we have chosen **up arrow**.

When you press this key on the keyboard, the sprite will move.



6. Click on **Motion** button.

7. Select **set rotation style ()** block and place it under **when () key pressed** block.

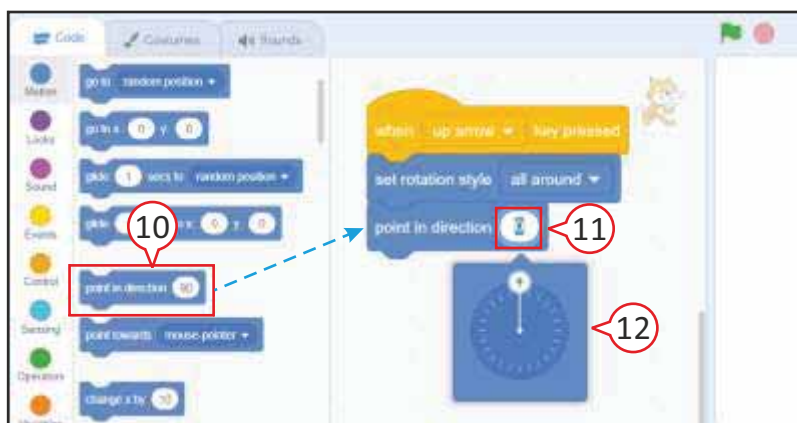
8. Click on **down arrow** button.

A pop-up menu appears.

9. Select the rotation style.

The correct rotation style must be chosen so that the sprite faces the way it is moving.

In this example, we have chosen **all around**.



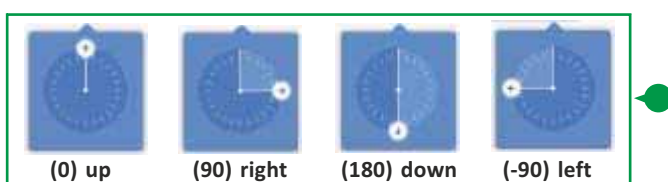
10. Select **point in direction 90** block and fix it under **set rotation style ()** block.

11. Click on white box.

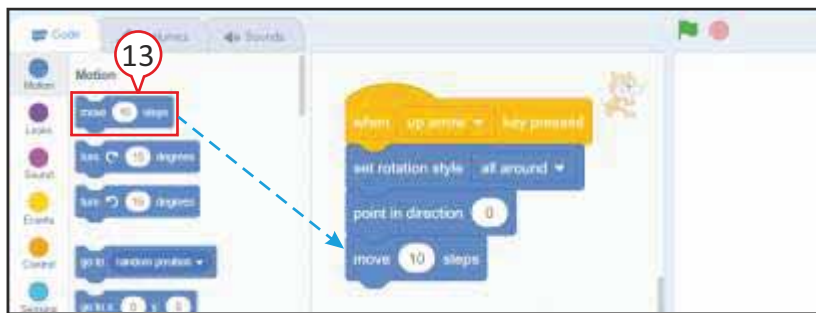
12. Set the direction by rotating the arrow.

In this example we have chosen **(0) up**.

- A sprite's direction value controls in which direction it will rotate.







13. Select **move 10 steps** block and drag it into the Script Area and fix it under **point in direction** block.



14. Click on **Looks** button.

15. Select **next costume** block and drag it into the Script Area and fix it under **move 10 steps** block.



16. By using the steps 1 to 15, create three more scripts with different keys (down arrow, right arrow and left arrow) and directions (180 down, 90 right and -90 left).

Now your script is complete. It is time to check the codes. Press any arrow key from the keyboard.





## Forever Block

The **Forever** block is a **Control** block which runs the script continuously until the **Stop** button is clicked. When you click Forever block, the blocks held inside this block get executed in a loop and that loop never ends until the **Stop** button is clicked. This block is mainly used to perform a task repeatedly.



**Stop** [●] button is in red color and is used to stop the project any time.

## Project: Newton's Law of Gravity



### Subject Integration

#### Science

This integration will help students understand how gravitational force works.

In this project, you will see apple falling from the tree and the girl saying 'Newton's Law of Gravity'.

When you start Scratch, you see a cat as a sprite with a white background.

1. Remove the cat sprite by clicking on **Delete** button of sprite icon from the Sprites List (not shown). Cat sprite gets removed.
2. Add a backdrop of **Colorful City**.



3. Add three new sprites **Apple**, **Tree 1** and **Avery**.
4. Change the size of all the sprites by clicking on **Size** box.

In this example, we have **decreased** the size of Avery and Apple and **increased** the size of Tree.

5. After resizing, drag the sprites on stage as shown.



In the above script, first we have inserted **flag** block from **Events** block menu on the stage.

Then, we have added **forever** block from **Control** block.

Then, we have added **next costume** block from **Looks** block and placed it inside the **Forever** block.

Then, we have added **wait** block from **Control** block and placed it inside the **Forever** block, just underneath the **next costume** block.

Then, we have added **say ()** block from **Control** block and placed it inside the **Forever** block, just underneath the **wait** block. Next, we have typed the text '**Newton's Law of Gravity**'.

6. In the Sprites List, click on the **Sprite icon** (Avery) for which you want to create a script.
7. Create a script in the **Script Area** for the selected sprite.



In the above script, first we have inserted **flag** block from **Events** block menu on the stage.

Then, we have added **forever** block from **Control** block.

Then, we have added **show** block from **Looks** block and placed it inside the **Forever** block.

Then, we have added **glide** block from **Motion** block and placed it inside the **Forever** block, just underneath the **show** block. Next, we have typed the x and y values for the apple on the stage (from up to down).

Then, we have added **wait** block from **Control** block and placed it inside the **Forever** block, just underneath the **glide** block.

8. In the Sprites List, click on the **Sprite icon** (Apple) for which you want to create a script.
9. Create a script in the **Script Area** for the selected sprite.



Then, we have added **hide** block from **Looks** block and placed it inside the **Forever** block, just underneath the **wait** block.

Then, we have added **glide** block again from **Motion** block and placed it inside the **Forever** block, just underneath the **hide** block. Then we have typed the x and y values for the apple on the stage (from down to up).



10. Click on **green flag** [ ] to start the script.

You will observe that apple keeps on falling from the tree and Avery keeps on saying 'Newton's Law of Gravity'.



Here, **Forever** block has been used for continuous loop. So, the sprites will keep on falling and saying until you press the **Stop** button.

11. Click on **Stop** [ ] button to stop the script.

Both sprites will stop.

Friends, your project is now completed and it is a good practice to save it.



## Saving a Project

A project includes all the sprites, scripts, and backgrounds that are used in it. It is a good idea to save your projects so you can see, reuse or modify them in future. The file extension of Scratch is **.sb3**.

1. Click on **File** menu.
2. Click on **Save to your computer**. **Save As** dialog box appears. Navigate the location where you want to save the project.
3. Type the name of your project in the **New Filename** text box.
4. Click on **Save** to save your project.



## In a Nutshell

- Scratch is a simple, fun-based visual programming language.
- Scratch projects are made up of small objects called sprites.
- Scripts are created by snapping blocks together.
- There are six block shapes: Hat, Stack, Boolean, Reporter, C and Cap.
- Scratch provides four different options for adding sprites to applications.
- The stage provides the canvas upon which sprites are displayed and interact with one another.
- Event-driven programming is a programming paradigm in which the flow of program execution is determined by events.
- The Forever block is a Control block which runs the script continuously until the Stop button is clicked.
- The file extension of Scratch project is .sb3.



## Exercises

### A. Tick [✓] the correct answer.

- We can change how a sprite looks by giving it a different ..... .  
 a. prop ☐    b. costume ☐    c. sprite ☐
- Snapping the blocks together into stacks is called ..... .  
 a. costume ☐    b. stage ☐    c. script ☐
- ..... block makes the Sprite's legs move, like it is walking.  
 a. Next Costume ☐    b. Motion ☐    c. Pen Down ☐
- ..... sprite button is used to create a new sprite.  
 a. Draw New ☐    b. Paint New ☐    c. Select New ☐
- ..... block runs the script continuously until the Stop button is pressed.  
 a. Motion ☐    b. Looks ☐    c. Forever ☐

### B. Write 'T' for True and 'F' for False statements.

- A script is a small object that performs actions on the stage.
- You can change how a sprite looks by giving it a different costume.
- The stage of Scratch window is 580 units wide and 380 units high.
- You can upload any image or sprite from a stored file in computer.
- You cannot work with more than one sprite on the stage.
- Event is an action or occurrence detected by a program.



**C. Fill in the blanks.**

1. Scratch provides ..... different options for adding sprite to our applications.
2. Stage provides the ..... upon which sprites are displayed and interact with one another.
3. A ..... is a set of repeatable instructions that we can store to carry out later.
4. When we start Scratch, the sprite appears with a white .....
5. We should ..... Scratch project to see, reuse or modify it in future.

**D. Differentiate between the following.**

- |                |               |
|----------------|---------------|
| 1. Sprite      | Script        |
| .....          | .....         |
| .....          | .....         |
| .....          | .....         |
| 2. Stack block | Boolean block |
| .....          | .....         |
| .....          | .....         |
| .....          | .....         |

**E. Answer the following questions.**

1. How is Scratch different from other programming languages?  
.....  
.....
2. In how many ways can we add a new sprite? Name them.  
.....  
.....
3. What does changing the costume mean?  
.....  
.....
4. What are the various ways of changing backdrop of stage?  
.....  
.....
5. What do you mean by the Forever block? Why is it used?  
.....  
.....

**F. Application-based Question**

Pooja has made a project by adding Motion blocks and Looks blocks, and has executed the project. Now, she wants to add her own picture as a sprite in her project. Tell her by which feature she can do so.

.....

# Activity Section

## Lab Activity

**Animate and make the sprites dance and move.**

### DANCING SPRITE

1. Choose a background (spotlight).
2. Choose a sprite (Ballerina).
3. Construct the following code:



Change the number to 0.5.



### Skill Formation

- This activity will help
- students learn coding in
- a creative way.

4. Now, click on the Green Flag button to see the animation.

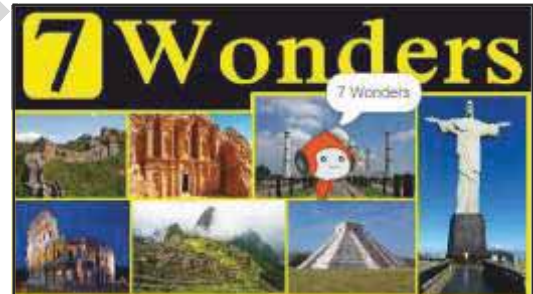
### MOVING SPRITE

1. Upload a background (7 Wonders).
2. Choose a sprite (Pico) and reduce the size (50%).
3. Construct the following code:



From drop-down list, select 'mouse-pointer'.

Change the text to '7 Wonders'.



### Subject Integration

#### General Knowledge

This integration will help students learn about seven wonders of the world.

4. Now, click on the Green Flag button and move the mouse on the stage to move the sprite to the pictures of different wonders of the world.

## Group Discussion

**Divide the students into groups and discuss – 'Scratch Provides Different Options for Adding a New Sprite'.**

## Online Link

To learn about making a game in Scratch, visit the website:  
<https://www.youtube.com/watch?v=i3U4W7Hx6BU>

# AI in Smart Homes

## OBJECTIVES

After completing this chapter, you will be able to:

- Understand the need and goals of Artificial Intelligence.
- Understand the role of AI in smart homes.
- Learn about some smart home products.

Today, AI has become an essential part of our daily lives. It helps reduce our work pressure and enhance productivity. In this chapter, we are going to study about the role of AI in making homes smart.



## Introduction

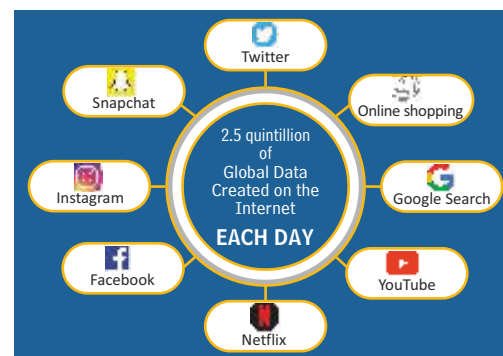
**Artificial Intelligence** is a technology that is transforming every walk of life in today's world. Whether to get driving directions or get music or movie recommendation, AI has improved and changed the way we live. All this has become possible only due to the development and advancement in the field of AI.



Many big organizations like **Google, IBM, Microsoft, Amazon, Facebook**, etc. are trying to unleash the full potential of Artificial Intelligence to create better products and services for their customers.

## NEED OF ARTIFICIAL INTELLIGENCE

**Data** is the heart of Artificial Intelligence, as no AI system can be developed or functional without adequate data. From tech companies to common people, we all make extensive use of **Internet**. Regular use of Internet has resulted into the generation of enormous amount of data available to us round the clock.



Data on the Internet

(The numbers are increasing every day.)

However, most of this data lacks proper formatting and organization, and needs a lot of changes. AI helps in proper organizing, maintaining and formatting of this data in order to better understand people's preferences, patterns and needs, and deliver most suitable services to them.

## Data used in Searches and Recommendations

**Online shopping** is the process whereby consumers directly buy goods or services from a seller in real-time, over the Internet. Amazon, Flipkart, eBay, etc. are the leading online shopping apps.



Flipkart



When you search for any product on an online shopping app, your search shows all the relevant products. You see **recommendations** for products you are interested in as '**customers who viewed this item also viewed**' or '**customers who bought this item also bought**' on the home page or at the bottom of the item page. AI gives these recommendations from the search you initiated.



With Artificial Intelligence, social networking companies analyze huge data to find out what is trending and other related patterns which help them understand users' behavior and display the content of their interest. Besides these, AI also helps social media platforms to protect the user data and information.

## GOAL OF ARTIFICIAL INTELLIGENCE

The main goals of AI is to:

- Copy human intelligence
- Carry out knowledge-intensive tasks
- Learn new things by itself
- Build machines which can perform tasks that require human intelligence such as:
  - Playing chess
  - Plan and carry out surgical operations
  - Driving a car in traffic



**AI has the potential to help humans live more meaningful and comfortable lives.**



# AI in Smart Homes

A **smart home** refers to a home setup where appliances and devices are automatically controlled remotely from anywhere using an Internet-enabled device. Won't you love if you could switch on air conditioner before reaching home or switch off lights even after you have left home or unlock the door to friends for temporary access even when you are not at home?



Don't be surprised. Companies are building such products or smart devices like digital assistants, smart cameras, smart security, etc. to make your life simpler, safer and more convenient.

## HOW DATA HELPS SMART HOMES TO BECOME SMARTER

The **smart devices** installed in a smart home are connected wirelessly to the Internet. These devices have **sensors** and **software** that allow them to communicate with other devices and help in collecting data for which they are programmed accordingly.

**Smoke sensor** is an example of smart devices that is used in smart homes to detect fire and gas leak incidents. They detect the presence of smoke or harmful gas in their surroundings and alert the people inside the house.



## SMART HOME PRODUCTS

Nowadays, there are many smart home products that are intended to make everyday life easier for us.

### Smart Assistant

**Smart virtual assistant** such as **Siri** or **Alexa** uses speech recognition technology to interact with users to do a variety of tasks. It plays music, manages lights, books cabs, sets reminder and does much more on voice commands.



### Smart Lighting

Using AI technology, **smart bulbs** connect to an app or smart home assistant, like **Siri** or **Alexa**, so you can control the light remotely or via voice commands. With smart lighting, you can manage the lighting in your home easily and more efficiently.

## Smart Cameras

This smart home security system allows you to view your home at any time from any location using your smartphone or other connected device. You can receive video alerts when your motion-detection camera records any movement. It also gives you an easy way to access the recorded footage.



## Smart Locks



A smart lock is a Wi-Fi enabled device that uses app or smart voice assistant. It lets users lock and unlock doors through their smartphone or voice command. Smart locks even allow remote access to a third party, so a guest can unlock the smart lock on the door and enter inside while you are not at home.

## AI Lab

### SMART HOME – LUIS

You know that, Artificial Intelligence helps computer or machines to communicate with humans in their own language.

**LUIS** (Language Understanding Service) is a service developed by **Microsoft**. It is an **AI application** that understands the commands given by the user and makes an appropriate action that the user wants it to perform.

### How to Play LUIS Online?

To start this game, you need a computer with Internet connection.

1. Click on **Start** icon to open Start menu (or press ).
2. Click on **Microsoft Edge**. **Microsoft Edge** window appears.
3. Click on address bar and type <https://aidemos.microsoft.com/luis/demo>
4. Press **Enter** key from the keyboard.

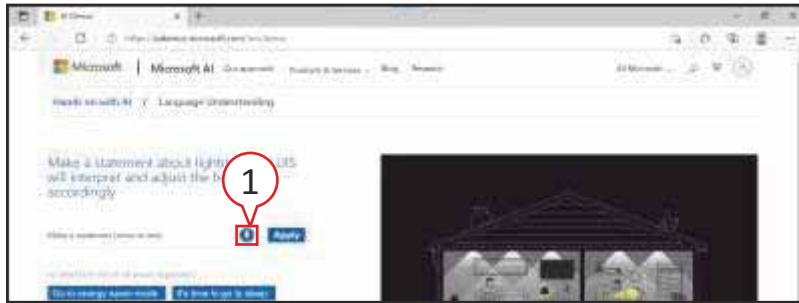


You can instruct LUIS in three forms: **voice data**, **text data** or select any command from the **preset suggestions**.

After giving instruction, AI system executes appropriate action.




## Instructing with Voice Command

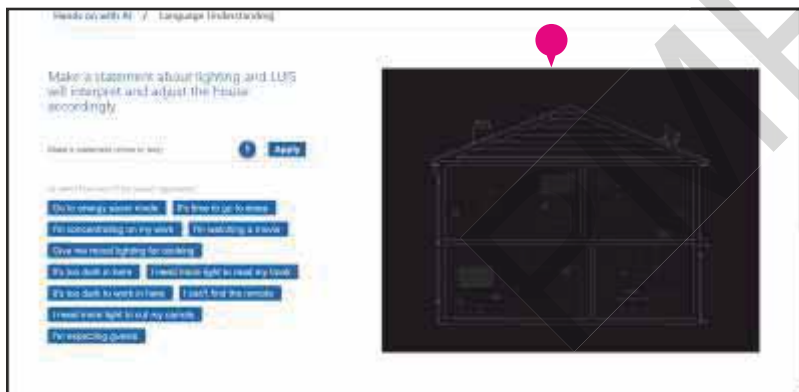
For giving voice command, you need a **microphone** attached to the computer.



1. Click on **Microphone** icon [  ].



- Microphone icon [  ] changes into recording icon [  ].
2. Speak your command ("**Turn off all the lights**").
  3. Click on the **recording** icon [  ].



- AI system now executes the appropriate action and **turns off** all the lights of home as shown in the picture.

## Instructing with Text Command

You can also give text command in LUIS.



1. Click inside the **Make a statement** box and type "**Turn on the lights of Kitchen**".
2. Click on **Apply** button.

- You can see that AI interprets the given text instruction and acts accordingly, i.e. it **turns on the lights in the kitchen** as shown.

## Instructing with Preset Commands

You can also give preset commands in LUIS.

1. Click on any preset command, i.e. “**It’s too dark in here**”.

- Now AI interprets the given preset instruction and acts accordingly, i.e. it **turns on all the lights in the home** as shown.

2. Click on another preset command, i.e. “**I’m expecting guests**”.
- Now AI executes appropriate action and **turns on the lights of the main door for the guests** as shown.

After playing this game, you must have learned how AI system understands your commands and responds accordingly to control the lighting system of a house.

### Skill Formation

- This activity would enhance the language skills of the students.



## In a Nutshell



- Regular use of Internet has resulted into the generation of enormous amount of data everyday.
- AI gives recommendations in e-commerce sites from the search we initiate.
- The main goals of Artificial Intelligence are to copy human intelligence, learn things by itself and carry out knowledge-intensive tasks.
- The smart devices installed in a smart home are connected wirelessly to the Internet.
- LUIS is an AI application that understands user's commands and makes appropriate action.



## Exercises

### A. Tick [✓] the correct answer.

- ..... are used in smart homes to detect fire and gas leak incidents.
  - Smart lightings ☐
  - Smoke sensors ☐
  - Smart locks ☐
- ..... is the heart of Artificial Intelligence.
  - Data ☐
  - Output ☐
  - Instruction ☐
- AI gives ..... from the search initiated by us.
  - products ☐
  - recommendations ☐
  - hints ☐
- Smart virtual assistant uses ..... recognition technology to interact with users.
  - vision ☐
  - face ☐
  - speech ☐
- ..... is an AI application that controls the lighting system of a house.
  - LUIS ☐
  - SIRI ☐
  - Lyra ☐

### B. Write 'T' for True and 'F' for False statements.

- Many big organizations are trying to unleash the full potential of AI.
- Regular use of Internet generates enormous amount of data.
- Windows is a leading online shopping app.
- With smart lighting, you can control the light remotely.
- LUIS application only works with preset commands.

**C. Fill in the blanks.**

1. AI helps social media platforms protect the user ..... and .....
2. Through ....., consumers directly buy goods or services on Internet.
3. Devices installed in a smart home are interconnected through the .....
4. A smart camera gives us easy ways to access the recorded .....
5. LUIS is an AI application developed by .....

**D. Differentiate between the following.**

Smart Camera

Smart Lock

.....	.....
.....	.....
.....	.....

**E. Answer the following questions.**

1. How do social networking companies make use of Artificial Intelligence?

.....

.....

.....

2. What are the main goals of Artificial Intelligence?

.....

.....

.....

3. Name any three smart home products.

.....

.....

4. How does the LUIS app work?

.....

.....

.....

**F. Application-based Question**

Bhaskar's father and mother both are working parents, due to which most of the time he has to stay alone at home. They (Bhaskar's parents) require a smart home device through which they could keep an eye on their home virtually from their office. Can you suggest them the same?

.....

# Activity Section





## Activity Rearrange

Rearrange the jumbled-up letters and write the correct words in the given space.

1. S N E O R S .....  
.....
2. M T R S A O K C L .....  
.....
3. A D T A .....  
.....

## Activity Matching

Match the following smart products with their respective functions.

	Smart light	• Smart home surveillance system
	Smart camera	• Used for a variety of tasks, i.e. play music, book cab, check bank balance
	Smart lock	• Controls the lighting remotely
	Smart assistant	• Used to lock and unlock the doors through app or voice command



## Lab Activity Akinator (Domain – Data)

This game is based on guessing theme. It will ask you some series of questions and will try to guess what fictional or real-life character, object, or animal you are thinking of. Click on the link <https://en.akinator.com/> to play and enjoy this magical game:



### Skill Formation

- This activity
- enhances the
- reasoning skills of the students.

**Note:** If you download this game in a smartphone, you will get an additional option of movie guessing.

## Group Discussion

Divide the students into two groups and discuss the topic – 'Smart Products Paved the Way for Smart Homes'.

# Worksheet-II

## Chapters 5 - 8

### A. Tick [✓] the correct answer.

1. The history of the Internet starts with the birth of .....  
a. ARPANET ☐ b. Intranet ☐ c. Website ☐
2. The company that provides Internet connection is called .....  
a. IPS ☐ b. ISP ☐ c. SPI ☐
3. .... is the unique address of each web page.  
a. WWW ☐ b. URL ☐ c. ISP ☐
4. The step-wise instructions help in completing a task .....  
a. easily ☐ b. complex ☐ c. hardly ☐
5. Snapping the blocks together into stacks is called .....  
a. costume ☐ b. stage ☐ c. script ☐
6. .... sprite button is used to create a new sprite.  
a. Draw New ☐ b. Paint New ☐ c. Select New ☐
7. .... block runs the script continuously until the Stop button is pressed.  
a. Motion ☐ b. Looks ☐ c. Forever ☐
8. .... is the heart of Artificial Intelligence.  
a. Data ☐ b. Output ☐ c. Instruction ☐
9. .... are used in smart homes to detect fire and gas leak incidents.  
a. Smart lightings ☐ b. Smoke sensors ☐ c. Smart locks ☐
10. Smart virtual assistant uses ..... recognition technology to interact with users.  
a. vision ☐ b. face ☐ c. speech ☐

### B. Write 'T' for True and 'F' for False statements.

1. Internet was developed in 1969. ☐
2. It is difficult to solve a problem in step-wise manner. ☐
3. Operators blocks perform mathematical functions. ☐



4. Event is an action or occurrence detected by a program.
5. LUIS application only works with preset commands.



**C. Fill in the blanks.**

1. A ..... is a software that is used to open the websites.
2. .... was the first successful graphical web browser.
3. .... blocks changes the appearance and costumes of sprites.
4. The file extension of Scratch file is .....
5. When we start Scratch, the sprite appears with a white .....
6. The main goal of ..... is to copy human intelligence.
7. Regular use of ..... has resulted into the generation of enormous amount of data everyday.
8. A smart camera gives us easy way to access the recorded .....

**D. Define the following.**

1. Web browser
2. URL
3. Modem
4. Search engine
5. Control blocks
6. Forever block
7. Smart Assistant

**E. Differentiate between the following.**

1. Dial-up Connection and Broadband Connection
2. Reasoning and Step-wise Thinking
3. Stack Block and Boolean Block
4. Looks Block and Sound Block
5. Smart Camera and Smart Lock

**F. Answer the following questions.**

1. Write three responsibilities of a digital citizen.
2. What are the advantages of Internet?
3. How can we secure ourselves while using the Internet at public places?
4. Why should we choose strong password for our personal account?
5. What does changing the sprite's costume mean?
6. What is an events-based programming?
7. What do you mean by the Forever block? Why it is used?
8. Name any three smart home products.
9. What are the main goals of Artificial Intelligence?
10. How does the LUIS app work?

# Project Work

## Project Step-wise Thinking

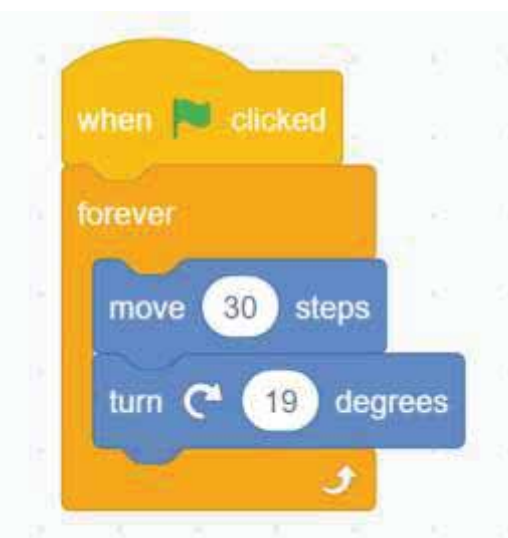
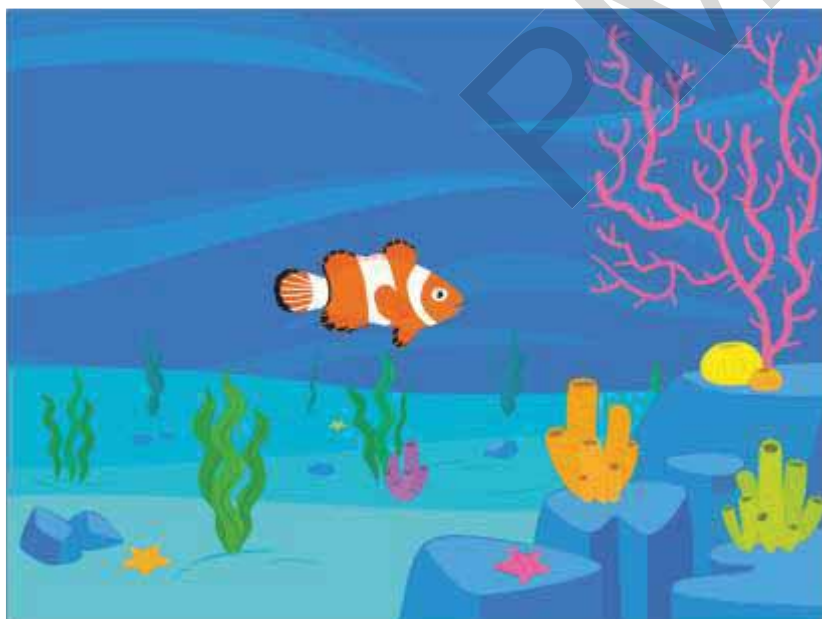
**Here is a different way to find out someone's birthday.**

**Ask your friends to follow these instructions:**

- Write the number that stands for the month your friend was born. (January is 1, February is 2, March is 3, and so on)
- Double the number and add 6.
- Multiply the new number by 50.
- Add the day your friend was born, subtract 365 and then add 65.
- Make a slash between the second and third digit from the right. The numbers to the left of the slash stand for the month your friend was born; the numbers to the right stand for the day your friend was born.

## Project Scratch

**Make a fish circle in the water by arranging the blocks as shown below and run the project.**



## Project Internet

Open the Internet and open the site related to the topic '**Good Habits of Digital Citizen**' and collect information on it. Try to make a PowerPoint presentation on it and save the presentation file as 'Good Habits'.

## Project Word

**Your friend has asked you to prepare an advertisement for the mobile phone she has put up for sale. First, prepare the unformatted pamphlet as shown in Picture 1. Then format it so that it looks like the one in Picture 2.**

### Mobile for Sale

Own a one year old iPhone 7, rose gold, 64 GB

Scratchless, looks like new

Need a genuine buyer

Accessories: back cover, tempered glass and wireless headphone

If interested, call ABC at 222-333333.

Picture 1

### Mobile for Sale



Own a one year old iPhone 7, rose gold, 64 GB.

- Scratch less, looks like new
- Need a genuine buyer
- Accessories: back cover, tempered glass and wireless headphone

**If interested, call ABC at 222-333333**

Picture 2

### Follow the instructions given below:

1. Open Word and type the pamphlet text, as shown in Picture 1.
2. Save the document using the file name 'Mobile for Sale'.
3. Center align the headline (first line) and the signature line (last line).
4. Change the font size of the headline to 48 point and the font to GrilledCheese BTN, or a similar font. Apply purple font color to the text.
5. Change the font size of body text between the headline and the signature line to 22 point.
6. Change the font size of the signature line to 20 point.
7. Change the font of the body text and signature line to Comic Sans MS.
8. Insert bullets for the three lines of text above the signature line.
9. Change the color of the words – iPhone 7, rose gold, 64 GB – to dark green.
10. Make the text bold in the signature line.
11. Underline the phone number in the signature line.
12. Insert the picture (any iPhone 7 pic) centered just below the headline.
13. Add a 6-pt magenta color page border.
14. Change the contact name ABC in the pamphlet to your first name.
15. Save the pamphlet again with the same file name.

# Additional Information

## Google Docs

**Google Docs** (or Google Documents) is an online Office Suite, in which you can create, edit and share three types of documents – **Document**, **Spreadsheet** and **Presentation**. Each of the three document types has common operations applicable to all including loading, saving, renaming, and sharing.

**The advantages of using Google Docs are:**

- We can access the applications and documents wherever we have access to the Internet and a web browser.
- There are no compatibility issues; everyone is working on the same version.
- Documents are stored online, and there is no need to carry any storage media like a USB drive or disc with us while we travel.
- The data stored online is very much secure and well-protected.

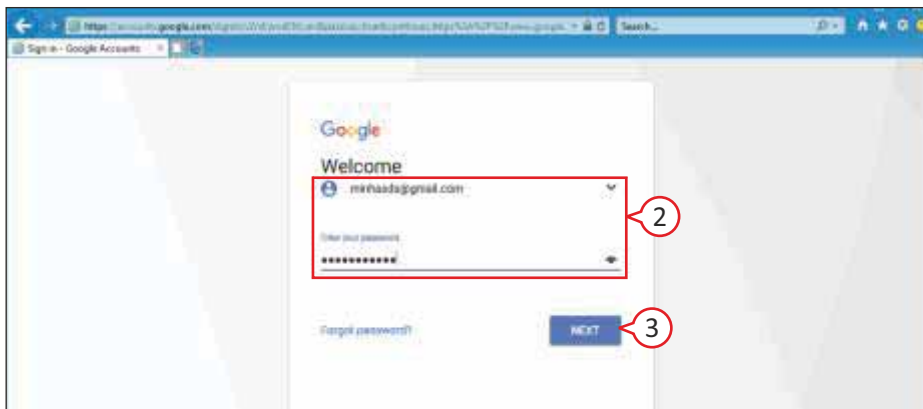
## STARTING GOOGLE DOCS

To start Google Docs, open **Google** page in the web browser.



1. In the Google page, click on **Sign in**.

**Google account** page appears.



2. Type your **login ID** and the **password**.

*Your login ID and password are same as that of your Gmail account.*

3. Click on **Next** button.



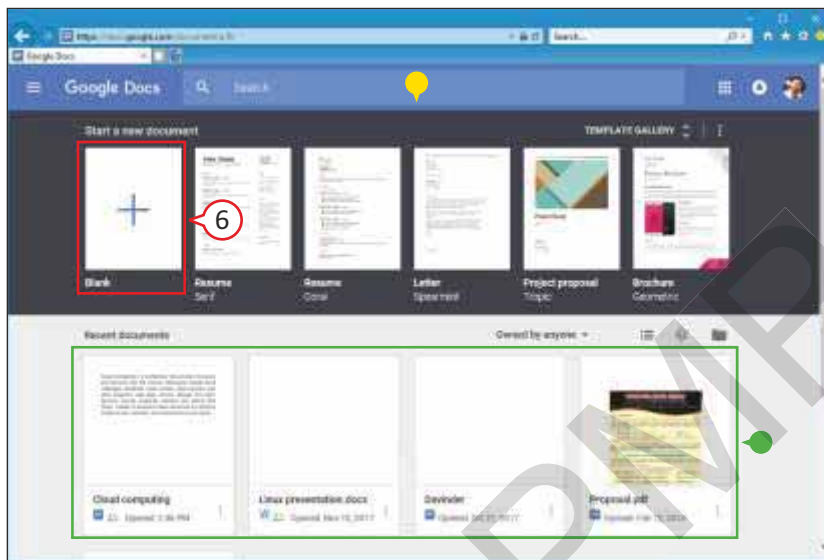
Google page appears again with your login details.



4. Click on **Google Apps** button.

A list of all Google Apps appears.

5. Click on **Docs**.



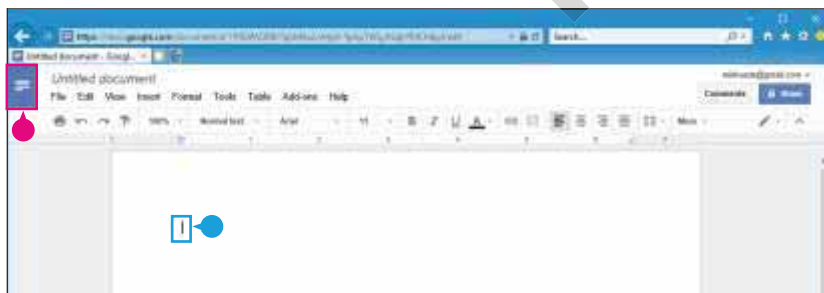
**Google Docs** app appears.

- This area shows you **Template Gallery**, which includes blank as well as pre-designed documents to select and work on.

6. Click on **Blank** to start a new document.

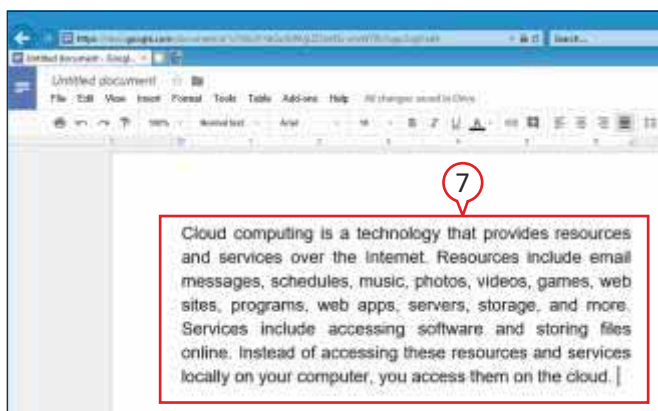
- This area shows the list of existing documents.

An empty document will appear on your screen.



- The text you type appears where the insertion point flashes on your screen.

- You can click on this button to return to **Docs app** home.



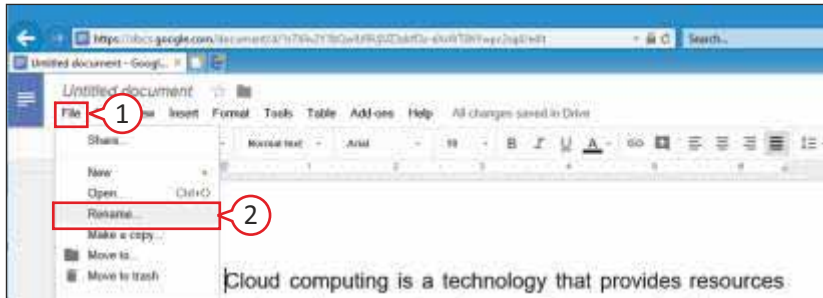
7. Type your text.

All your text is automatically saved as you type. This document gets saved in **Google Drive**. Which is an online storage used to store your data.

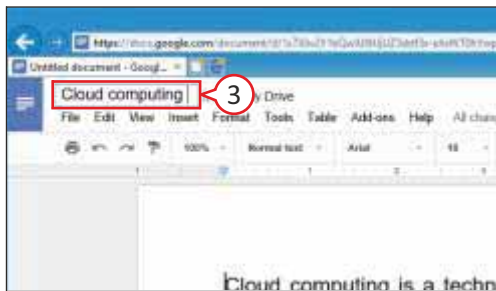
When you return to Docs app home, this document is displayed in the Google Docs listing.

## RENAMING THE DOC

By default, the name of the blank document appears as **Untitled document**, but you can rename it and give it a new name.



1. Click on **File** menu.
2. Click on **Rename**.



A text box opens.

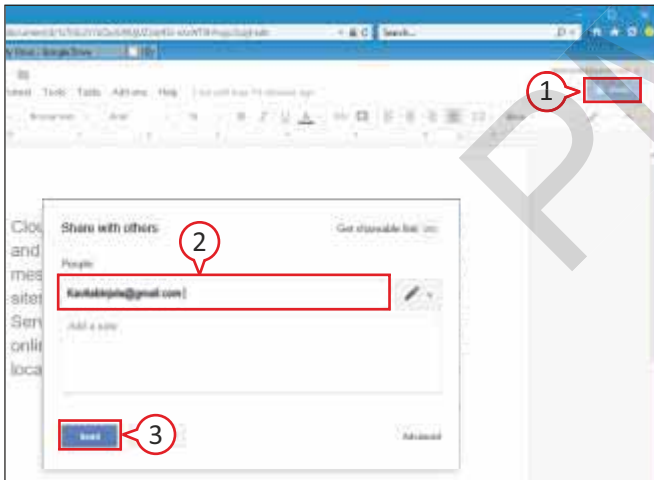
3. Type the desired name in the text box.
4. Press the **Enter** key.

The new name appears in Docs app.

*The new name also appears in **Google Drive**.*

## SHARING YOUR FILE

You can share your file with your friends, family, relatives, etc. through email.



1. Click on **Share** button.
- Share with others** dialog box appears.

2. Type the e-mail ID of the receiver.  
You can share the file to more people by typing multiple e-mail IDs.

3. Click on **Send**.

The email is sent to the people whose email IDs typed.

## SHARING A LINK

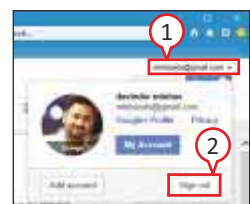
After creating the file, you can also share it with other people through a link.

1. Click on **Share** button. **Share with others** dialog box appears.
2. At the top right, click on **Get shareable link**. A link of your file appears.
3. Copy and paste the link in an e-mail or any other place you want to share it.

## SIGNING OUT FROM GOOGLE DOCS

After finishing your work in Google Docs, you must logout from it.

1. Click on **Google Account**. A pop-up window appears.
2. Click on **Sign out** button. The Google Docs window closes.





# NATIONAL CYBER OLYMPIAD

## SAMPLE PAPER — SYLLABUS 2021-22

CLASS  
**4**

### SYLLABUS

**Section-1:** Patterns, Alphabet Test, Coding-Decoding, Mirror Images, Embedded Figures, Geometrical Shapes and Solids, Ranking Test, Direction Sense Test, Days and Dates & Possible Combinations, Analogy and Classification.

**Section-2:** About Computers (General Information), Evolution of Computers, Parts of Computer, Input and Output Devices, Hardware, Software, MS-Word(Formatting a Word document, Font group, Format Painter, Search using Find and Replace option, Checking Spelling and Grammar using Thesaurus), Using Windows 7, Introduction to Internet and Its Uses, Computer Networks, MS-Paint, Latest Developments in the field of IT.

**Section-3:** Higher Order Thinking Questions - Syllabus as per Section-2.

Questions are based on Windows 7 and MS-Office 2010.

Total Questions: 35












Time: 1 hr.

PATTERN & MARKING SCHEME			
Section	(1) Logical Reasoning	(2) Computers & IT	(3) Achievers Section
No. of Questions	5	25	5
Marks per Ques.	1	1	2

### LOGICAL REASONING

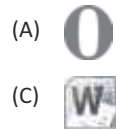
- What is the next number in the given number pattern?  
125, 150, 175, 200, ...?....  
(A) 205 (B) 215 (C) 225 (D) 250
- Choose the correct mirror image of the word , FIXING, if the mirror is placed vertically to the left.  
(A) GNIXIF (B) ǝNIXIF (C) ǝNIXIF (D) GNIXIF
- In a certain code, if 3456 is coded as ROPE, 15526 is coded as APPLE, then how is 54613 coded?  
(A) RPPEO (B) ROPEA (C) POEAR (D) PAREO

### COMPUTERS AND INFORMATION TECHNOLOGY

- Internet can be used for \_\_\_\_\_.  
(A) Checking exam results (B) Chatting (C) E-mailing (D) All of these
- When your desktop is cluttered with open windows, you can use \_\_\_\_\_ to select a single window and minimize the rest.  
(A) Aero Peek (B) Aero Shake (C) Aero Steer (D) Aero Flip
- Which of the following is a word processing software?  
(A)  (B)  (C)  (D) Both (A) and (B)
- This key is used to move cursor to the beginning of the line or the screen depending on the software used. Identify the key.  
(A)  (B)  (C)  (D) 
- 1024 bytes equals \_\_\_\_\_.  
(A) 1 Kilobyte (KB) (B) 1 Megabyte (MB) (C) 1 Gigabyte (GB) (D) 1 Character
- Napier's Bones is so named because it was invented by  
(A) John Napier (B) Blaise Napier (C) Thomas Napier (D) Thomas Abacus
- While working with MS-Paint which option is used to add name to your drawing?  
(A) Text tool (B) Pencil tool (C) Air brush tool (D) Erase tool
- Which of the following is a correct internet address?  
(A) ww.yahoo.com (B) www.cartoonnetwork.co  
(C) www.hotmail.com (D) www.indiatime.comm
- In MS-Word 2010, which colour wavy line under a word indicates a spelling or grammar mistake?  
(A) Red (B) Green (C) Yellow (D) Both (A) and (B)
- Internet is used for audio and video calling across geographies. A popular tool for such internet calls is \_\_\_\_\_.  
(A)  (B)  (C)  (D) 

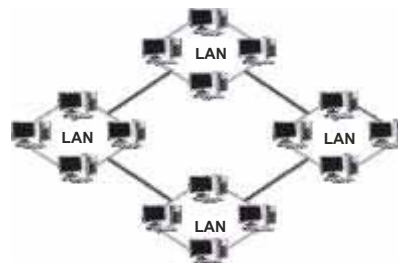
## ACHIEVERS SECTION

14. A pop-up menu is displayed when we do right click on a desktop icon. Which of the following options holds the pop-up menu depicted in the given image in Windows 7?



15. Which of the following types of network is used to connect the LANs shown in the given image?

- (A) CAN  
(B) PAN  
(C) WAN  
(D) SAN



## SAMPLE ANSWER SHEET

1. **Name:** If your name is SAURAV GUPTA, then you should write as follows:

S A U R A V G U P T A

2. **Father's Name:** If your father's name is DINESH GUPTA then you should write as follows:

D I N E S H G U P T A

SCHOOL CODE				
M	H	O	S	A
A	A	0	0	0
B	B	1	1	1
C	C	2	2	2
D	D	3	3	3
E	E	4	4	4
F	F	5	5	5
G	G	6	6	6
H	H	7	7	7
I	I	8	8	8
J	J	9	9	9
K	K			
L	L			
M	M			
N	N			
O	O			
P	P			
Q	Q			
R	R			
S	S			
T	T			
U	U			
V	V			
W	W			
X	X			
Y	Y			
Z	Z			

### 3. SCHOOL CODE

Write your school code  
i.e. if your school code  
is MH0547 darken as  
follows:

Darken the circle

### 6. GENDER

If you are a boy then  
darken **Male** circle

GENDER	
MALE	FEMALE

### 4. CLASS

If you are in Class 10  
then you should  
darken as follows:

### 5. ROLL NO.

If your roll no. is 587,  
then you should write  
and darken the circles  
as follows:

CLASS		ROLL NO.		
1	0	5	8	7
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

Darken the circle

CORRECT  
way to darken  
the circle

Z.

WRONG  
way to darken  
the circle

Z.

7. If your choice for Answer 1 is C, then you should darken the circle as follows: 1. (A) (B) (C) (D)

## MARK YOUR ANSWERS WITH HB PENCIL/BALL POINT PEN (BLUE/BLACK)

### National Cyber Olympiad

1. (A) (B) (C) (D)  
2. (A) (B) (C) (D)  
3. (A) (B) (C) (D)

4. (A) (B) (C) (D)  
5. (A) (B) (C) (D)  
6. (A) (B) (C) (D)

7. (A) (B) (C) (D)  
8. (A) (B) (C) (D)  
9. (A) (B) (C) (D)

10. (A) (B) (C) (D)  
11. (A) (B) (C) (D)  
12. (A) (B) (C) (D)

13. (A) (B) (C) (D)  
14. (A) (B) (C) (D)  
15. (A) (B) (C) (D)

## ANSWERS

1. (C) 2. (B) 3. (C) 4. (D) 5. (B) 6. (A) 7. (B) 8. (A) 9. (A) 10. (A) 11. (C) 12. (D) 13. (A)  
14. (D) 15. (C)

SPACE FOR ROUGH WORK