Be Future Ready

IT Planet®

2

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.

AUTHOR

CONTENTS

1 Computer at Various Places

OBJECTIVES

After completing this chapter, you will be able to:

- Understand the features of computer.
- Identify the different types of computer.
- Understand the uses of computer at different places.

Hi Friends! Welcome back again. Let us study more about the types of computers and their uses at different places for different purposes.

What is a Computer?

A **computer** is an **electronic device** that takes **instructions** from us and gives the **result** after **processing** them.

FEATURES OF COMPUTER

- Computer works very fast without making any mistakes.
- It can do many things. It helps us play games, watch movies, listen to songs and carry out many other tasks.

Types of Computers

Nowadays, different types of computers are used at different places. Some computers are big while others are small in size.

Let us study the different types of computers.

SUPERCOMPUTER

Supercomputers are very big and powerful. They work very fast and can store a huge amount of information. These computers are used for weather forecasting and research purpose.

Supercomputer


Desktop Computer

DESKTOP COMPUTER

Desktop computers are small and are placed on a desk. These computers are used in homes, schools and offices.

LAPTOP COMPUTER

Laptop is a small, lightweight and portable computer. It is designed in such a way that it can be placed conveniently on your lap. It can work on batteries as well as main power supply.


Laptop Computer


Tablet PC

TABLET PC

A **Tablet PC**, or a **Tablet Computer**, is a special type of computer which is very small in size. It is equipped with a digital camera, microphone and touchscreen.

It is used by touching the screen with a finger.

SMARTPHONE

A mobile phone that provides computer facility in addition to basic phone facilities is called a **Smartphone**. It has a built-in digital camera and a touchscreen. The size of a Smartphone is smaller than a Tablet PC.


Smartphone

Uses of Computer

You all must have heard or read fairy tales. In such stories, the **fairy** has a **magic wand** in her hand and she can do anything by using that wand.

In the present world, a computer acts no less than a magic wand! You can do many things with this wonderful machine.

Let us study the different uses of computer.

COMPUTERS IN SCHOOL

Computers are used in school for:

Activity Tip

Ask your teacher to show you some educational movies on the computer.

COMPUTERS IN OFFICE

Computers are used in office for:

Typing and printing documents

Keeping a record of employees

Sending and receiving e-mails

Activity Tip

Ask your parents to show you for what purposes they use a computer in their office.

COMPUTERS IN BANK

Computers are used in bank for:

Withdrawing money from an ATM

Keeping record of money

Maintaining accounts of the customers

Activity Tip

Ask an elder in your family to take you to an ATM and show you the process of withdrawing money.

COMPUTERS AT HOME

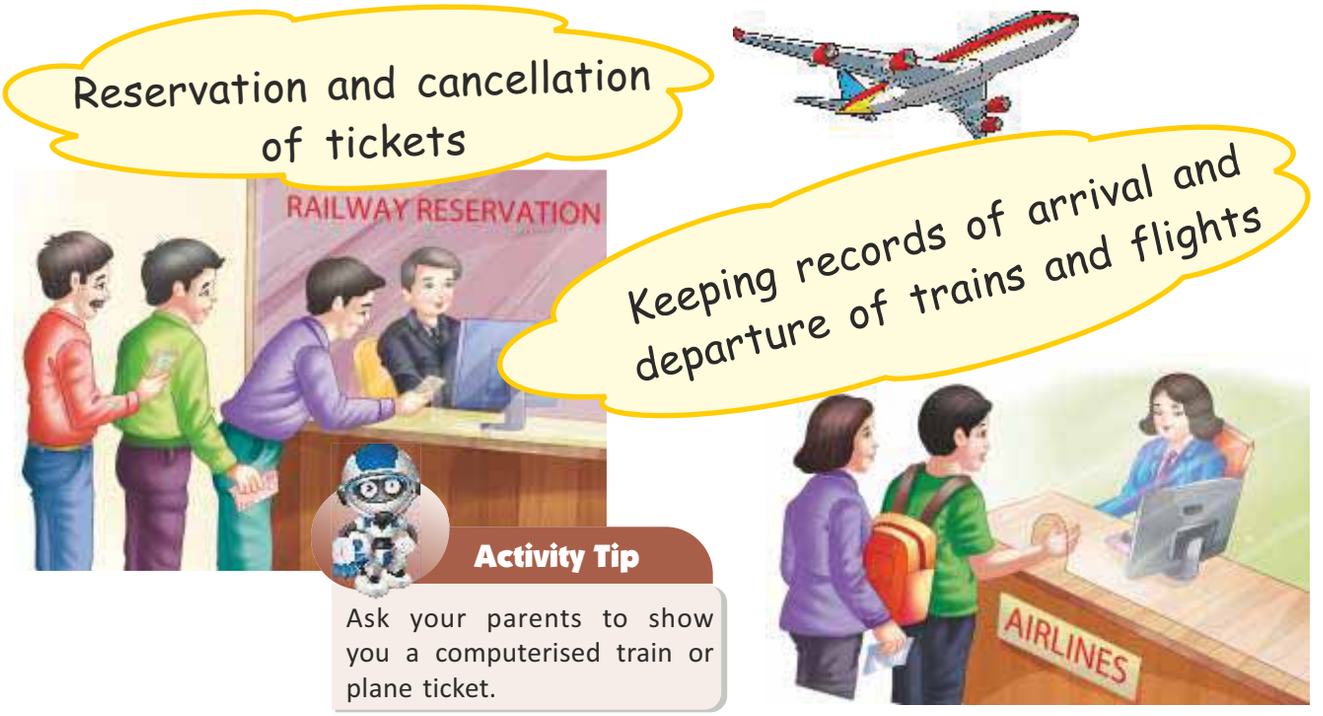
Computers are used at home for:

Activity Tip

Ask your parents to show you a cartoon on a computer.

COMPUTERS AT RAILWAY STATION AND AIRPORT

Computers are used at railway station and airport for:

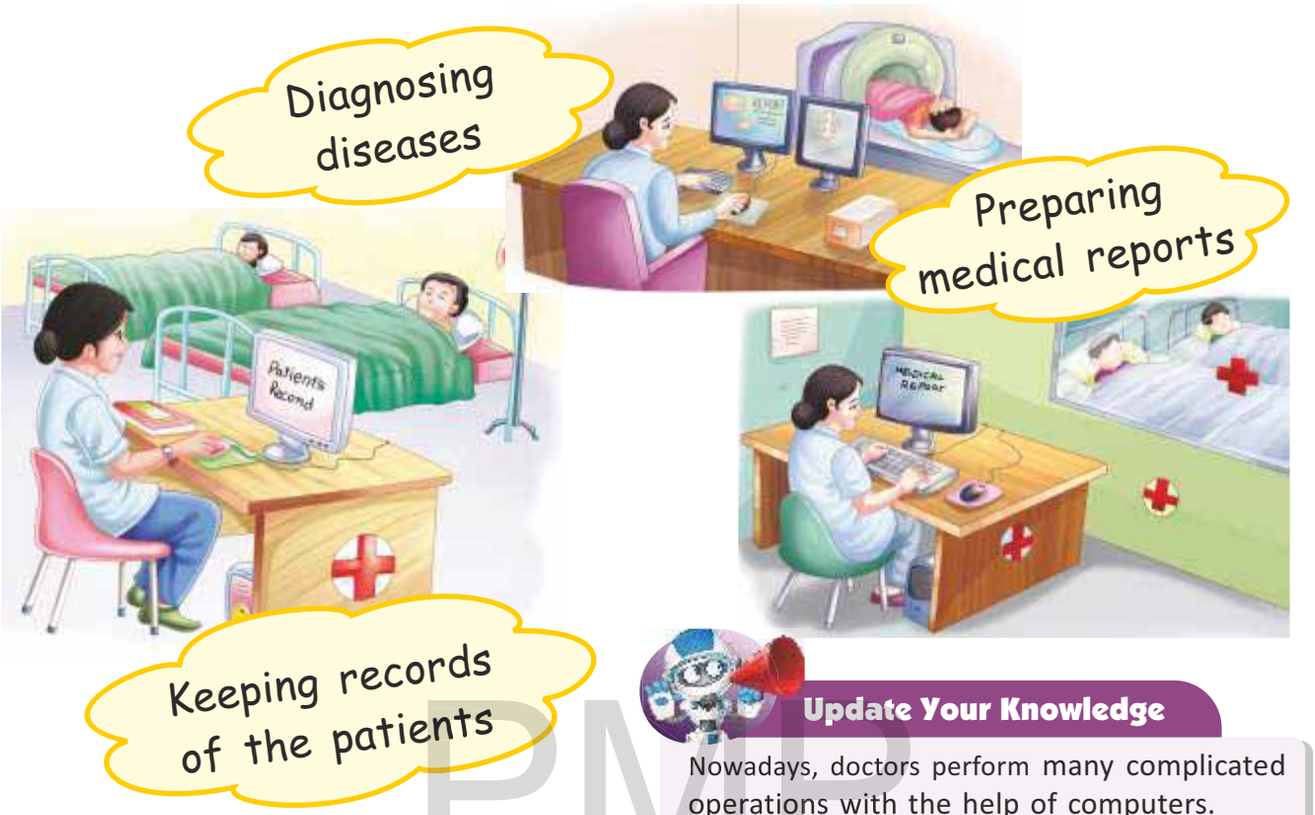


Activity Tip

Ask your parents to show you a computerised train or plane ticket.

COMPUTERS IN HOSPITAL

Computers are used in hospital for:



Update Your Knowledge

Nowadays, doctors perform many complicated operations with the help of computers.

COMPUTERS IN ENTERTAINMENT

Computers are used in entertainment for:

Activity Tip

Ask your parents to let you play some games on the computer.

In a Nutshell

- A computer is an electronic device that takes instructions from us and gives the result after processing them.
- Supercomputer, desktop computer, laptop computer, tablet PC and smartphone are different types of computers.
- We can do many things using a computer.
- Computers are used in schools, offices, banks, homes, hospitals, shops, airports and railway stations.

Exercises

A. Tick [✓] the correct answer.

1. A computer is a/an ..... device.

   a. manual ☐ b. natural ☐ c. electronic ☐

2. ..... is designed to be placed conveniently on your lap.

   a. Desktop ☐ b. Laptop ☐ c. Tablet PC ☐

3. In ....., computers are used for preparing exam result.

   a. school ☐ b. office ☐ c. bank ☐

4. In office, computers help in ..... documents.

   a. playing ☐ b. drawing ☐ c. printing ☐

5. At railway station, computers help in booking ..... .

   a. fees ☐ b. tickets ☐ c. recording ☐

6. In ....., computers are used for keeping records of the patients.

   a. school ☐ b. office ☐ c. hospital ☐

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

1. Computers can do only one type of work. ☐
2. Supercomputers can easily be carried from one place to another. ☐
3. Laptops are very big in size. ☐
4. In banks, computers are used for playing games. ☐
5. Computers can be used to make drawings. ☐

C. Fill in the blanks with the help of words given in the box.

Tablet PC	Laptop	Supercomputer	Desktop

1. _____ works very fast and stores a huge amount of information.
2. _____ computers are used in schools.
3. _____ works on batteries as well as main power supply.
4. _____ can be used by touching the screen with a finger.

D. Fill in the blanks by unscrambling the letters.

1. In school, computer is used for _____.

E	C	I	G	T	H	A	N

2. Computer is used for booking tickets at _____.

R	R	A	P	T	I	O

3. Computer helps a doctor to diagnose _____.

A	S	E	D	S	I	E

E. Answer the following questions.

1. What is a computer?

2. Name the different types of computers.

3. What is the use of computers in a bank?

4. How are computers used in entertainment?

F. Application-based Question

Carefully observe the picture and describe the activity or work in progress.

Activity Section

Activity Matching

Match the uses of computers with correct pictures.

Printing Documents

Teaching and Learning

Booking Tickets

Withdrawing Money

Lab Activity

Open the Educational Suite GCompris [ ].

1. Click on this **icon** [ ] from the top of Gcompris.
2. Click on **Words** [Words]
3. Click on **Image Name** [ ].

Skill Formation

- This activity uses pictures to enhance visual spatial skills of the students.

PLAYING METHOD

You can play this game by dragging each image from the side to the corresponding names. Click on **OK** to check the answer.

Your level in the game increases when you drag all the images to their correct name.

Group Discussion

Divide the students into three groups and discuss the topic: 'Which Type of Computer — Laptop, Tablet, or Desktop — is the Best for Schools?'.

2 Computer Devices

OBJECTIVES

After completing this chapter, you will be able to:

- Understand the uses of computer devices.
- Learn about some basic input devices.
- Learn about some basic output devices.
- Learn about commonly used storage devices.

You have learnt about the parts of computer in your previous class. Let us move ahead and learn about computer devices.

Introduction

Computer devices are the parts that can be attached to a computer to do different kinds of work.

Computer devices are mainly divided into **three groups**: Input devices, Output devices and Storage devices.

Now, let us study about them one by one.

INPUT DEVICES

The **data** and **instructions** that we enter into the computer are called **inputs**. The devices that help in entering these data and instructions into the computer are called **input devices**.

Some basic input devices are:

Keyboard

A **keyboard** is an **input device** which is used to type words and numbers into the computer.

Keyboard

Mouse

Mouse

A **mouse** is an **input device** which is used to draw pictures and select objects on the monitor. It is also known as **pointing device**.

Joystick

A **joystick** is an **input device** which is used to play games on the computer.

Joystick

Microphone

Microphone

A **microphone** is an **input device** which is used to record the voice and send it into a computer.

Scanner

A **scanner** is an **input device** which is used to scan the images and send them to a computer.

Scanner

OUTPUT DEVICES

The result that comes after processing the instructions is called **output**. The devices that help us in getting and viewing the output are called **output devices**.

Some basic output devices are:

Monitor

A **monitor** is an **output device** which is used to display the output on its screen. Information displayed on the monitor is also known as **soft copy**.

Monitor

Printer

Printer

A **printer** is an **output device** which is used to give output on a paper, called **printout**. The information that we get as a printout on the paper is called **hard copy**.

Speakers


Speakers

Speakers are the most common **output devices**. They are used to give output in the form of sound.

You can listen to music and other sounds played on the computer with the help of speakers.

STORAGE DEVICES

Storage allows you to save your work for future use. A computer can store your work in different **storage devices**.

Some commonly used storage devices are:

Hard Disk

A **hard disk** is the main **storage device** in a computer that stores large amount of data and information at a very fast speed.


Hard Disk


CD-ROM

CD-ROM

CD-ROM stands for **C**ompact **D**isc-**R**ead **O**nly **M**emory. It is also used to store data. It is circular in shape.

DVD

DVD stands for **D**igital **V**ideo **D**isc. It is similar to a CD in shape but has a larger storage capacity.


DVD


Pen Drive

Pen Drive

A **pen drive** is a portable data storage device which is used to store data and information. It is also known as **flash drive**.

In a Nutshell

- Keyboard, mouse, joystick, microphone and scanner are input devices through which we enter data and instructions into a computer.
- Monitor, printer and speakers are output devices through which we get the result or output.
- Hard disk, CD-ROM, DVD and pen drive are storage devices in which we can save our work.

Exercises

A. Tick [✓] the correct answer.

1. Keyboard is an example of ..... device.

   a. input ☐ b. output ☐ c. storage ☐

2. A ..... is used to play games on a computer.

   a. scanner ☐ b. printer ☐ c. joystick ☐

3. A ..... is used to give output on a paper.

   a. printer ☐ b. speaker ☐ c. scanner ☐

4. ..... is the main storage device in a computer.

   a. Hard disk ☐ b. DVD ☐ c. Pen drive ☐

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

1. Input devices are used to enter instructions. ☐
2. A mouse is also known as pointing device. ☐
3. A microphone is an output device. ☐
4. The output we get on a paper is called soft copy. ☐
5. Storage allows us to save our work for future use. ☐

C. Fill in the blanks after unscrambling the letters.

1. _____ is used to type words.

E B K A R O D Y

2. A CD-ROM is _____ in shape.

I C R L U C A R

3. _____ is a portable data storage device.

N P E I R E D V

D. Answer the following questions.

1. What are computer devices?

2. Name any one input and one output device.

3. What is the use of storage devices?

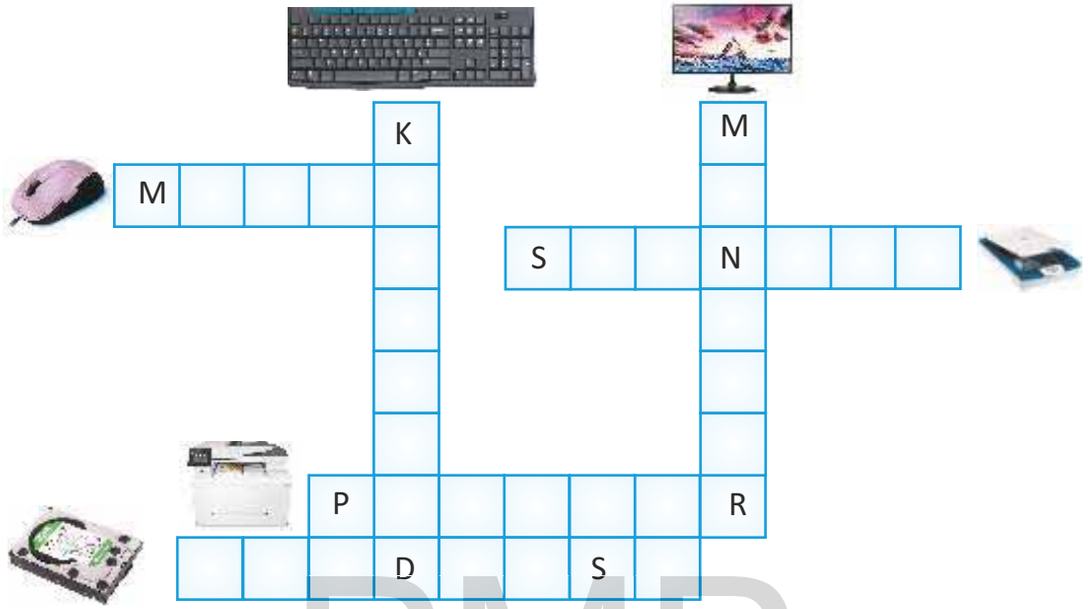
E. Application-based Question

At home, you saw your brother playing a computer game with a joystick. Tell him, what kind of computer device it is.

Activity Section

Activity Crossword

Solve the given crossword with the help of pictures.



Lab Activity

Open the Educational Suite GCompris [ ].

1. Click on this **icon** [ ] from the top of Gcompris.
2. Click on **Words** [Words]
3. Click on **Letter in which word** [ ].

Skill Formation

- This activity aids in the development of aesthetic and linguistic intelligence.

PLAYING METHOD

You can play this game by selecting all the words in the list containing the letter in the flag. Click on **OK** to check the answer.

Your level in the game increases when you select all the correct words.

Group Discussion

Divide the students into three groups and discuss the topic – 'Various Computer Devices at the Sales Counter of a Supermarket'.

3 Fun with Tux Paint

OBJECTIVES

After completing this chapter, you will be able to:

- Draw different shapes and drawing.
- Use various tools of Tux Paint to draw and paint.
- Understand the use of slide show to run all the scenes of a story or text.

Hello kids! In the previous class, you learnt the basics of Tux Paint and its tools. Let us move ahead and learn more about it.

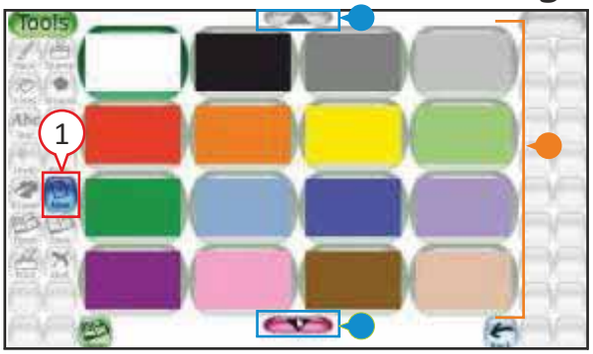
Tux Paint

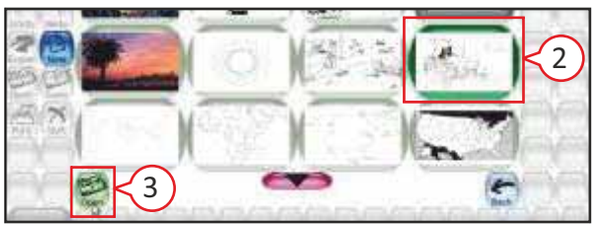
Tux Paint is a free drawing program used to draw different shapes and drawings. It was created by **Bill Kendrick** in the year 2002.

Bill Kendrick

Opening a New Drawing

New tool is used to start a new drawing which contains either **solid color** or **starter image** as background.

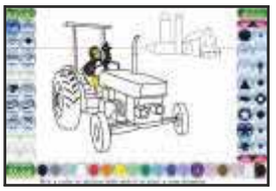




1. Click on **New** tool.
   - A new screen appears which shows solid background colors and starter images.
   - You can click on the **arrows** [ ] to see more color boxes or starter images.
2. Click on a **starter image**.

The image gets selected.

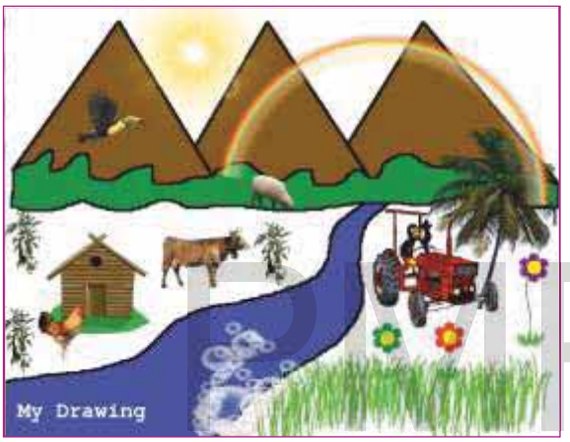
3. Click on **Open**.



The selected starter image appears on the drawing canvas.

Hey kids! Let us have some fun. Now, we will make the drawing project shown below by using various tools of Tux Paint.

Project: Create Scenery



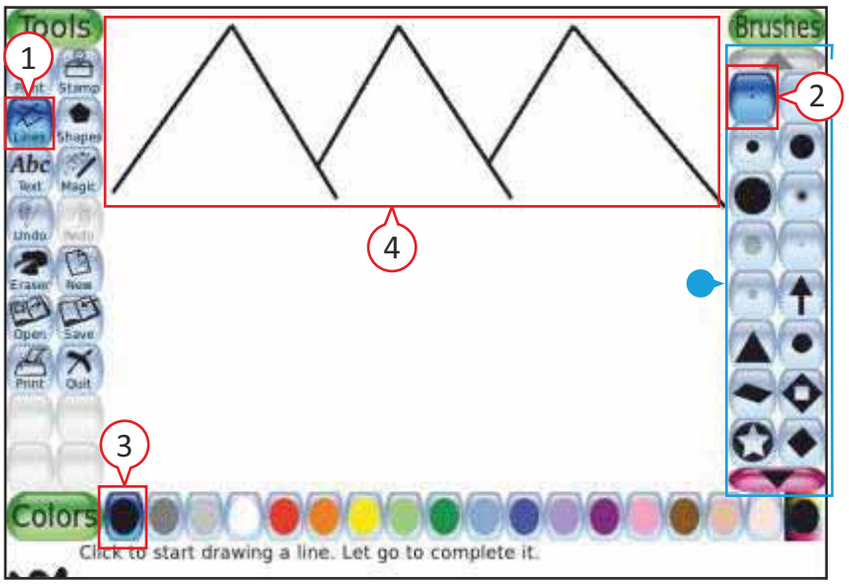
Subject Integration

EVS + Art

Students would become aware of the world around us, comprising of land, mountains, river, animals, birds, etc.

LINES TOOL

Lines tool is used to draw straight lines. We will use it for creating the lines of the mountain in the scenery.

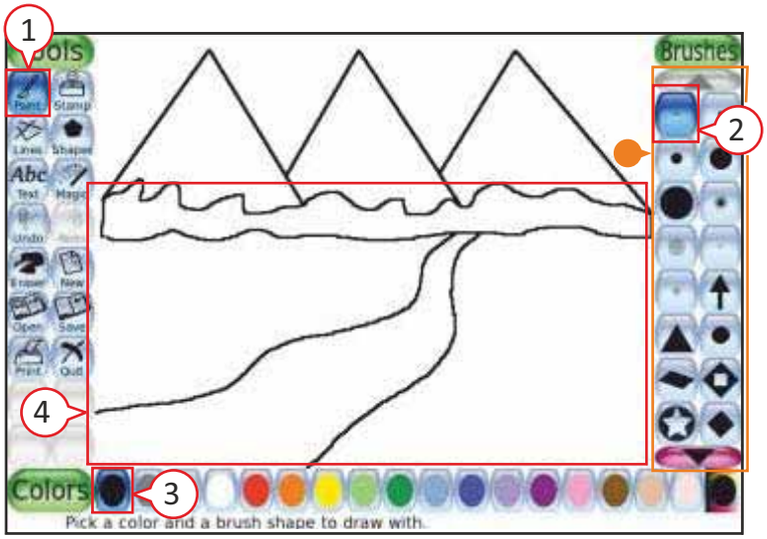


1. Click on **Lines** tool.
2. Click on the desired **Brush**.
3. Click on any **color** from the Color Palette.
4. Press the left mouse button and drag it to make straight lines.

- Different brushes appear in **selector**. You can click arrows [ ] to see more brushes.

PAINT TOOL

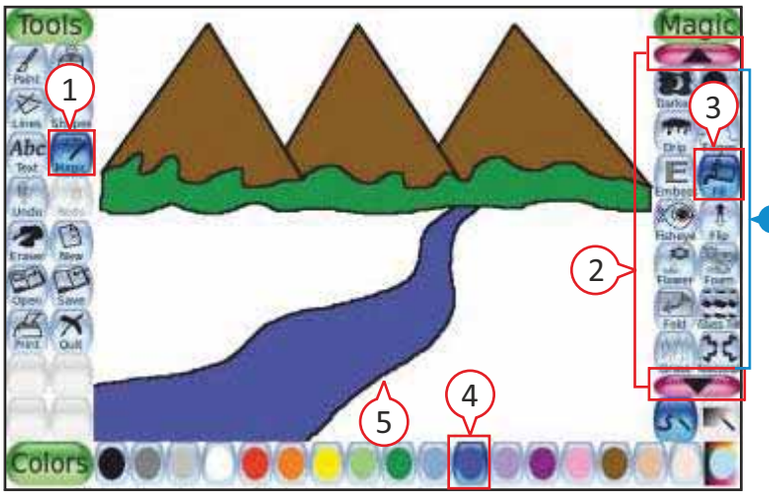
Paint tool is used to make freehand drawings. We will use it for creating the lines of river and grass cover in the scenery.



1. Click on **Paint** tool.
   - Different brushes appear in **selector**.
2. Click on the desired **Brush**.
3. Click on any **color** from the Color Palette.
4. Press the left mouse button and drag to make the drawing.

FILL TOOL

Fill tool is used to fill color in any closed shape. This tool is available in **Magic** tool. We will use it for filling the color in the mountains, grass cover and the river in the scenery.



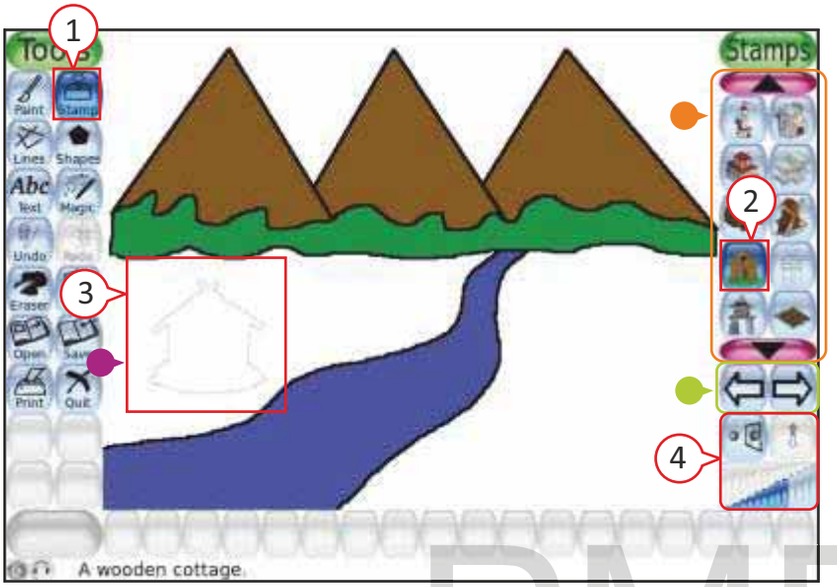
1. Click on **Magic** tool.
   - A list of magic tools appears in the **selector**.
2. Click on **arrows** [ ] to find the **Fill** tool.
3. Click on **Fill** tool.
4. Click on a color from the Color Palette.
5. Take the pointer inside the shape and click on it. The color gets filled.

Update Your Knowledge

Make sure that the image is properly closed, otherwise the color will spill all over the canvas.

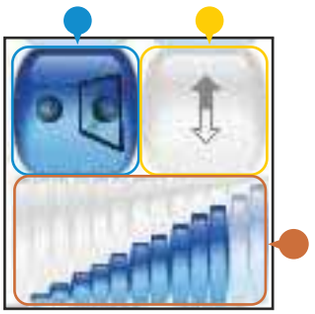
STAMP TOOL

Stamp tool is like a **rubber stamp** or a **sticker**. It is used to paste pre-drawn or photographic images (like the picture of a cat, flower or bird) in your drawing canvas. We will use it for pasting some pre-drawn images in the scenery.



1. Click on **Stamp** tool.
   - A list of stamps appears in **selector**.
   - You can click these **arrows** [⇦⇨] to see more **categories** of stamps like animals, birds, etc.
2. Click on a **stamp** from the selector.

3. Move your mouse around the canvas.
   - An outline of the stamp follows the movement of mouse, showing where the stamp will be placed and how big it will be.
4. Click on any of the following **control tools**:

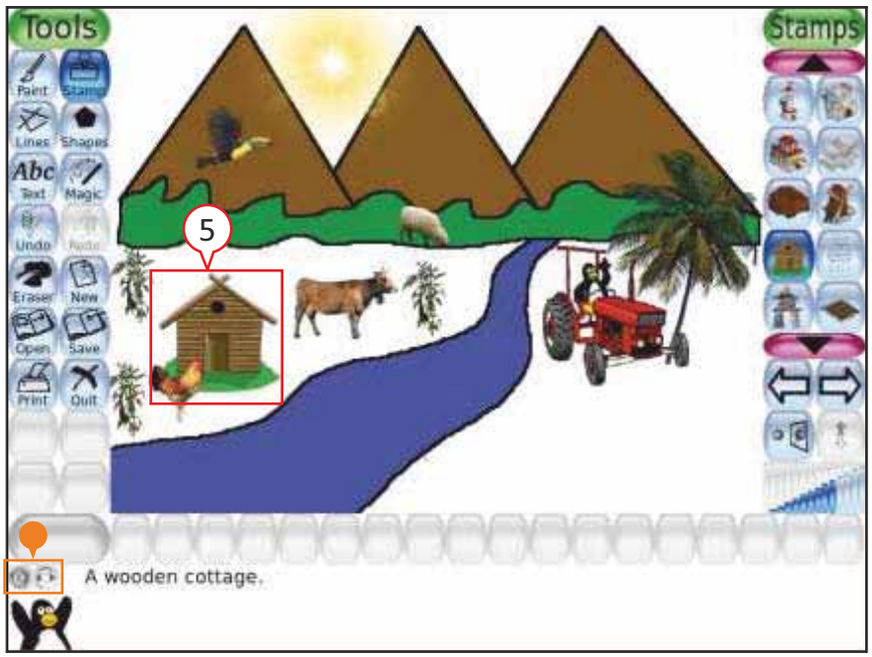


Control Tools

- Click this tool [ ] to display the stamp as a **mirror image**.
- Click this tool [ ] to **flip** the stamp.
- Click this tool [ ] to **increase** or **decrease** the size of the stamp.

Update Your Knowledge

Tux Paint is a free drawing program for Windows, Mac OS X and Linux.



5. Click on drawing canvas to place the image of the selected stamp.

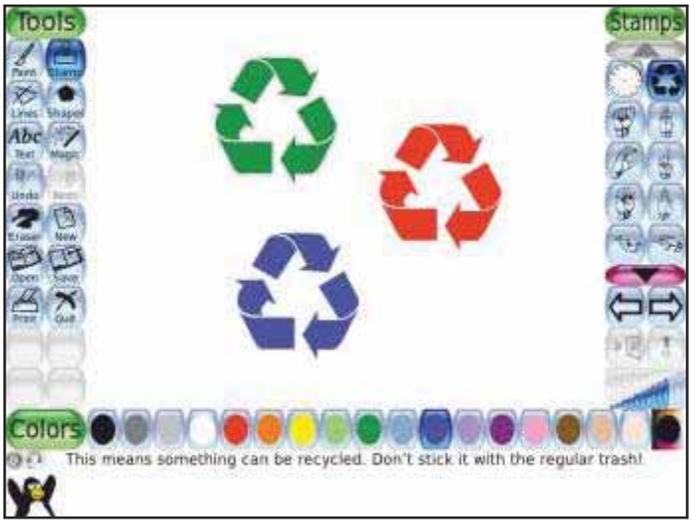
You can place multiple images of the same stamp on the canvas until you select other stamp.

6. Repeat steps **2** to **5** to place other stamps on the drawing canvas.

Some stamps even have **sound effects** or **spoken words**.

- You can click on these buttons [ ] to re-play the sound effects or spoken words.

*You can disable or enable the sound effect by pressing **ALT + S** keys from the keyboard.*



You can also fill the colors in some stamps.

If the **Color Palette** appears when you select the stamp, it means that you can change the color of the stamp.

Note: You need to install stamps from the official website of Tux Paint (wwwtuxpaint.org) before working with stamp tool.

Update Your Knowledge

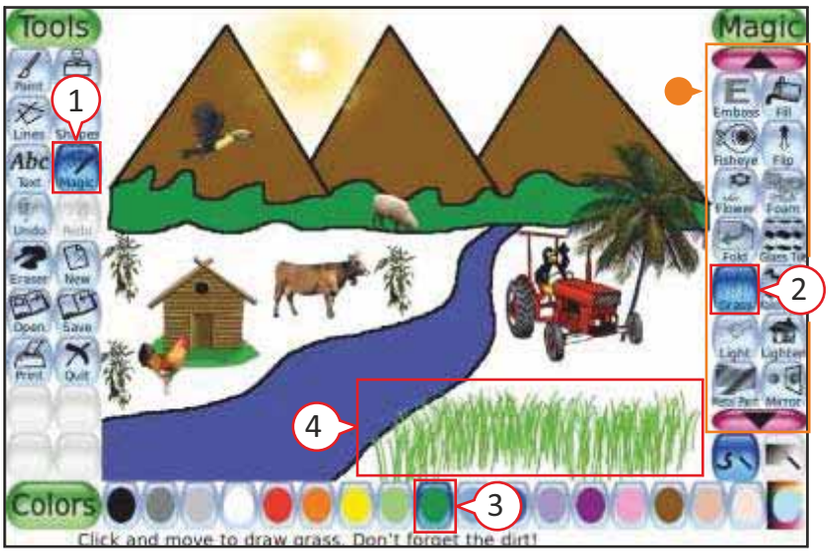
Hundreds of **photographic** and **cartoon stamp** images are available in **Stamp tool**. You can add more stamps and create categories. Stamps can be resized, flipped and mirrored.

Do You Know?

Sound effects are played when tools are selected and used.

MAGIC TOOL

Magic tool is used to add special effects. We will use it for adding special effects like grass, flowers, etc. in the scenery.



1. Click on **Magic** tool.
   - A list of magic tools appears in the **selector**.
2. Click on a magic tool (Grass) from the selector.
3. Click on the desired **color** from the Color Palette.

Note: The color option is not available for all the magic tools.

4. Now depending on the magic tool you have selected, you can either **click** and **drag** or simply **click** the picture once. The magic effect gets applied.

Just below the **selector**, there are two buttons [ ] which can help you decide whether you want to click and drag or simply click once for a particular effect.

- You can **click and drag** on the canvas for a particular effect, if the left button [ ] is highlighted.
- You can simply **click once** on the canvas for a particular effect, if the right button [ ] is highlighted.

5. Repeat steps **2** to **4** to apply other Magic effects on the drawing canvas.

*In this example, **Flower** magic tool has been selected and applied.*

- In the given example, '**Foam**' and '**Real Rainbow**' magic tools have also been selected.

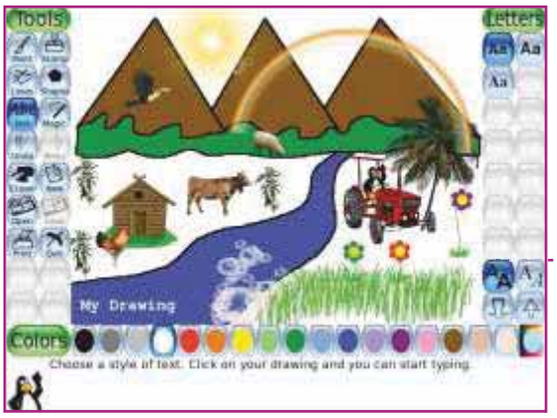
TEXT TOOL

Text tool is used to type text and numbers. We will use it for adding text like our name or caption in the scenery.

1. Click on **Text** tool.
   - Different text styles appear in the **selector**.
2. Click on a **text style**.
3. Click on a **color** from the Color Palette.
4. Click on the drawing canvas. A cursor [I] appears.

5. Type your text with the help of keyboard. Your text appears.

- You can click on **bold** [A] and **italic** [A] to change the style of text. You can also click on **size** buttons [ ] to change the size of text.



So friends, I hope you enjoyed making the project by using the different tools.

Finish

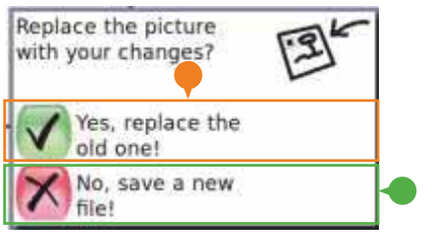
SAVE TOOL

Save tool is used to save your drawing.

1. Click on the **Save** tool from the toolbar.

If you are saving for the first time, it simply saves the picture.

If you have made changes in an already existing drawing, then a **dialog box** appears which asks you whether to replace the old file or save a new one.



Dialog Box

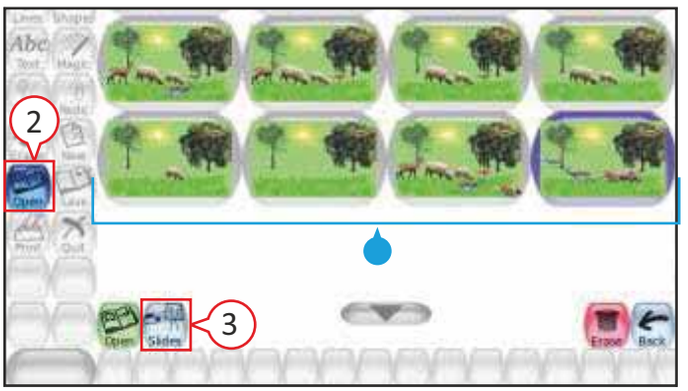
- Clicking on [✓] button will replace the previously saved picture with the new one.
- Clicking on [✗] button will create a new file.

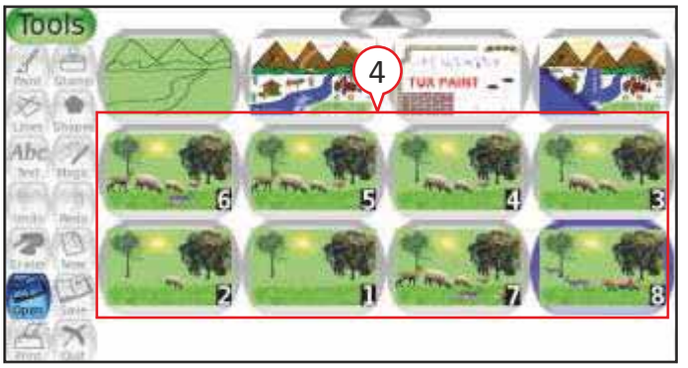
It will help you to create different files (scenes) for the story.

Slide Show

You can create different scenes of a story, save them, and make them run one after another as a **slide show**.

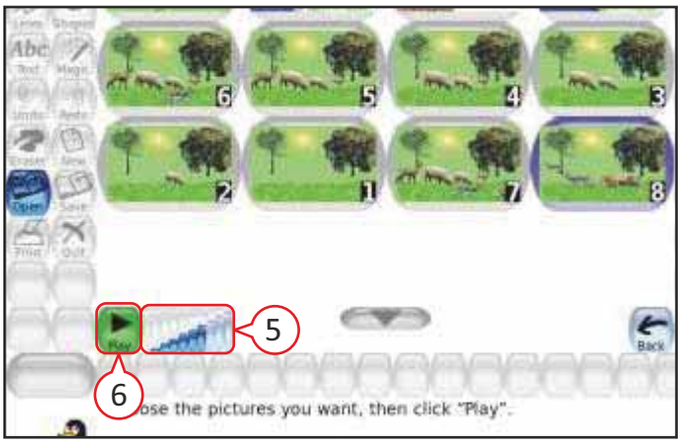
Slide show helps to run all the scenes of a story or text, one after another. Follow these steps to run a slide show:





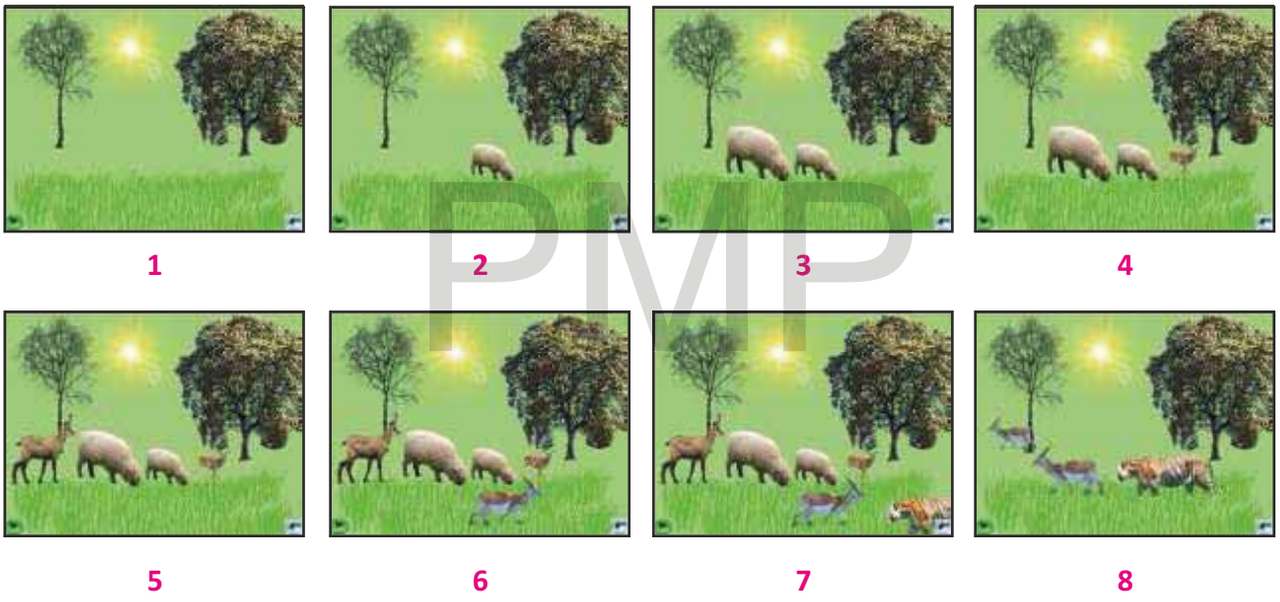
1. Make different pictures and save the files separately.
2. Click on the **Open** tool.
   - A list of saved pictures appears.
3. Click on **Slides** button.
4. Click on files in the order in which you want them to display as slides.

*When you click, a **digit number** appears on the file which lets you know in which order this file will be displayed.*



5. Click on **Sliding Scale** to adjust the speed of the slide show, from the slowest (left) to the fastest (right).
6. Click on **Play** button.

After clicking the **Play** button, the selected files start running one after another in the speed you have selected in step **5**. The selected slides appear as shown below:



It is the story of a jungle in eight slides. In this story, the animals are coming one by one to eat grass. Suddenly, a tiger comes and all the animals begin to run away.

Each slide has two buttons, **Next** [ ] and **Back** [ ].

- You can click on **Next** button to manually move to the next slide.
- You can click on **Back** button to exit the slide show and return to the slide show image selection screen.

In a Nutshell

- Tux Paint is used to draw different shapes and drawings.
- Paint tool is used to make freehand drawings.
- Stamp tool is like a rubber stamp or a sticker.
- Magic tool is used to add special effects in the drawing.
- Text tool is used to type text and numbers in the drawing.
- Slide Show helps to run all the scenes of a story or text, one after another.

Exercises

A. Tick [✓] the correct answer.

1. ..... tool is used to make freehand drawings.

   a. Eraser ☐ b. Paint ☐ c. Lines ☐

2. ..... tool is found in the Magic tool.

   a. Skew ☐ b. Fill ☐ c. Flip ☐

3. ..... tool is used as a sticker.

   a. Stamp ☐ b. Text ☐ c. Line ☐

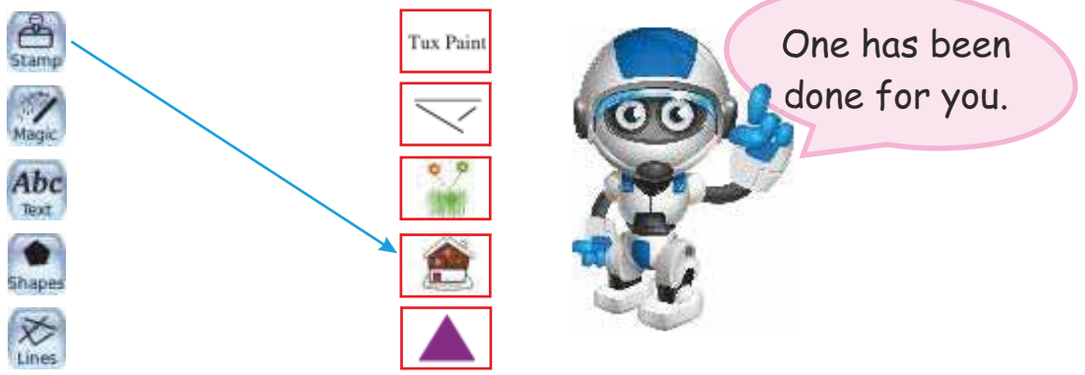
4. ..... tool is used to add text and numbers.

   a.  ☐ b.  ☐ c.  ☐

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

1. Tux Paint is a paid drawing program. ☐
2. You can fill color in a closed shape. ☐
3. You can apply only one stamp on the canvas. ☐
4. Magic tool is used to add special effects in the drawing. ☐

C. Match the following tools with their effects.



D. Fill in the blanks.

1. T ..... X P ..... I ..... T is a free drawing program used to draw different shapes and drawings.
2. S ..... A ..... P tool is used to paste pre-drawn images.
3. S ..... U ..... D effect can be disabled and enabled by pressing Alt + S keys from the keyboard.
4. S ..... I ..... E ..... H ..... W helps to run all the scenes one after another.

E. Answer the following questions.

1. What is the use of Stamp tool?

2. What is the use of Magic tool?

3. Why do we use slide show in Tux Paint?

F. Application-based Question

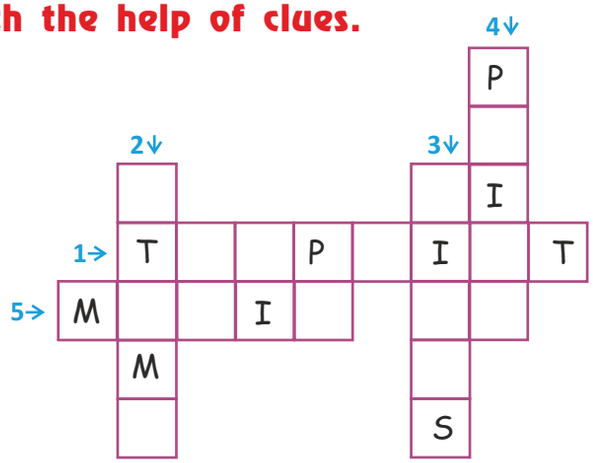
Rahul has created many drawings on Tux Paint. Now, he wants to show all his drawings one by one to his teacher. Which option should he use?

Activity Section

Activity Puzzle Time

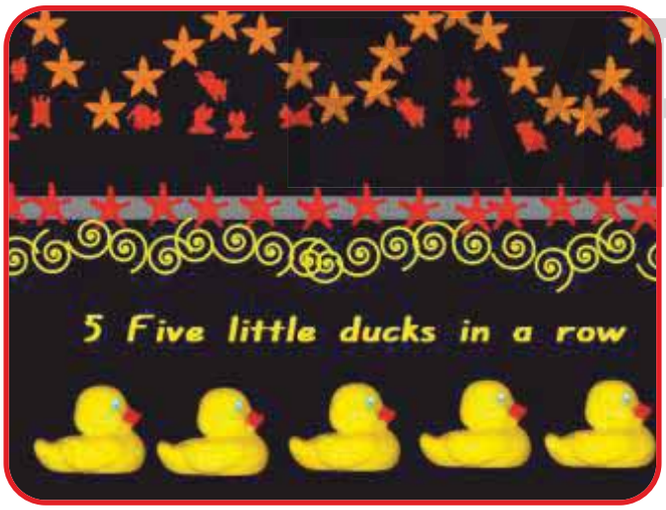
Solve the crossword puzzle with the help of clues.

1. Free drawing program
2. Works like a sticker
3. Draws straight lines
4. Makes freehand drawings
5. Adds special effects



Lab Activity

Draw similar kind of pictures in Tux Paint as shown.



Skill Formation

- This activity enhances creativity and innovation in students.

Art Integration

Student will use various tools of Tux Paint in making colorful sceneries and images on the Drawing Canvas.

4 Word 2016

OBJECTIVES

After completing this chapter, you will be able to:

- Understand the word processing program, Word.
- Identify various components of Word window.
- Change style, size and color of fonts in Word.
- Save your work for future.

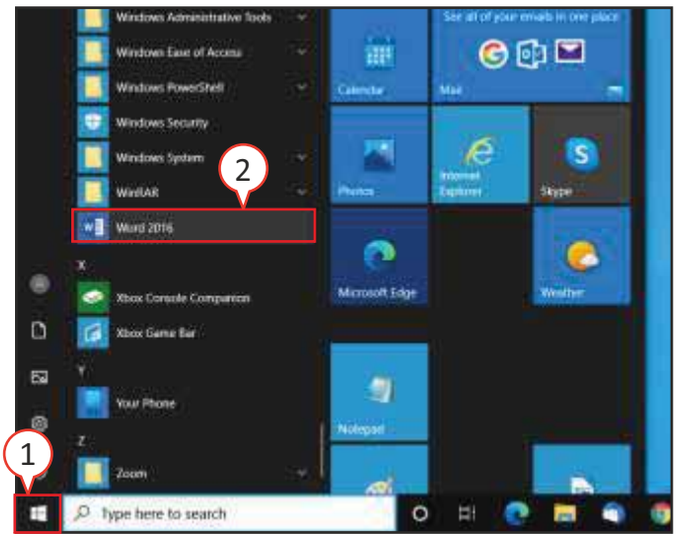
Hi Friends! You learnt about keyboard and its keys in the previous class. Now, let us practice on the keyboard using a program called Word.

Introduction

Word is a **word processing program** that is used for creating documents. You can type letters, words, sentences and numbers in it. Word can also be used to make your document look more beautiful and attractive.

STARTING WORD PROGRAM

To start Word, follow the steps given below.



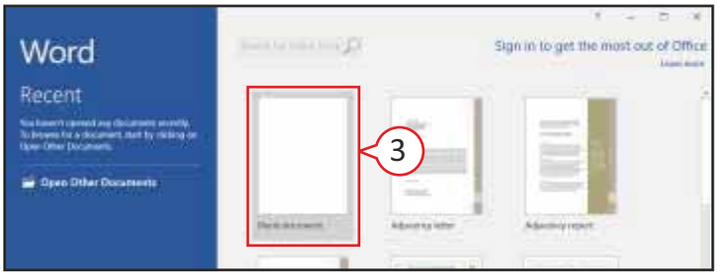
1. Click on **Start** icon.

The Start menu appears.

A list of all applications appears on the left.

You can scroll down to see more applications.

2. Click on **Word 2016**.



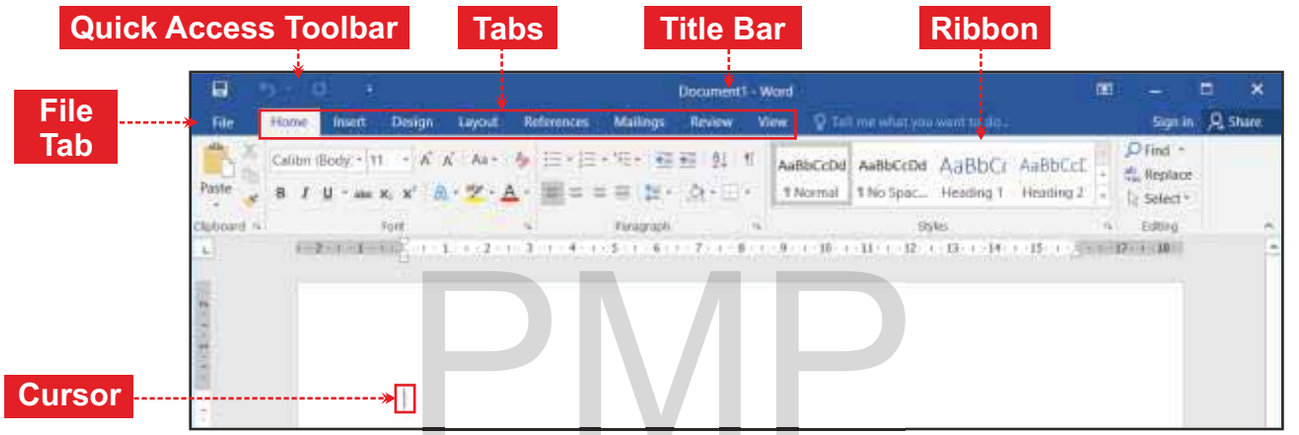
The **Word** window opens and displays its **Start screen**.

3. Click on **Blank document**.

An empty document titled **Document1** appears on your screen.

WORD WINDOW

After opening the Word program, the following window appears.



Title Bar: Title bar is located at the top and shows the name of the current document.

Quick Access Toolbar: It displays quick access buttons for Save, Undo, and Redo commands.

File Tab: It displays a drop-down menu of file commands such as New, Open and Save.

Tabs: Each tab provides a set of tools related to a task you are likely to be performing in a specific document.

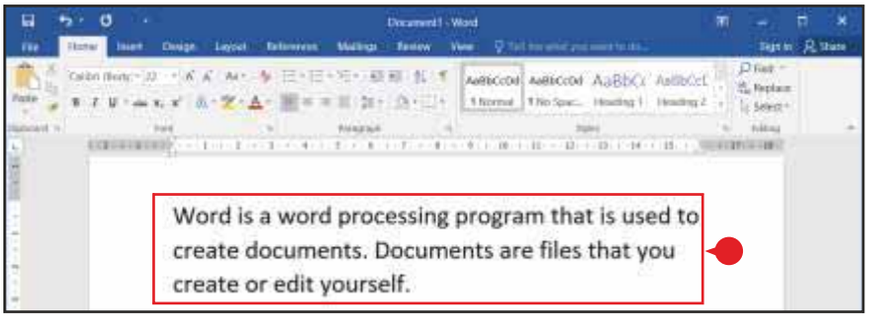
Ribbon: It displays groups of related commands in tabs. Each tab offers shortcut buttons to common tasks.

Cursor: It is a small vertical flashing line on the screen where you type the text.

Working with Word

ENTERING TEXT USING KEYBOARD

With the help of the **keyboard**, you can enter the text in Word. The text you type appears where the **cursor** blinks on the screen.



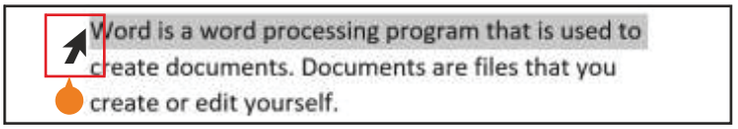
- Type the text for your document.

When the words reach at the end of a line, Word automatically moves the text to the next line. You need to press the **Enter** key only when you want to start a new paragraph.

SELECTING TEXT

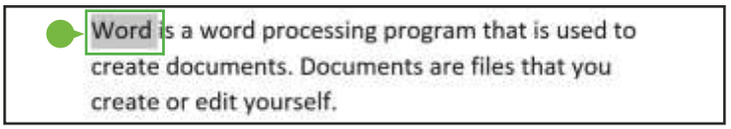
To make any change in your text in Word, you must select the text first. Selected text appears **highlighted** on your screen.

Select a Line



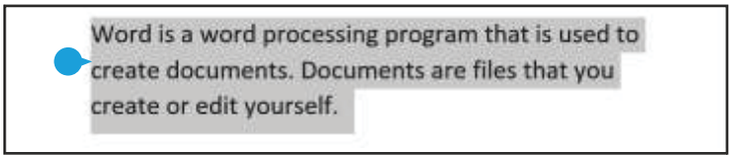
- **Click** on the white space to the left of the line to select it.

Select a Word



- **Double-click** on a word to select it.

Select a Paragraph



- **Triple-click** on a paragraph to select it.

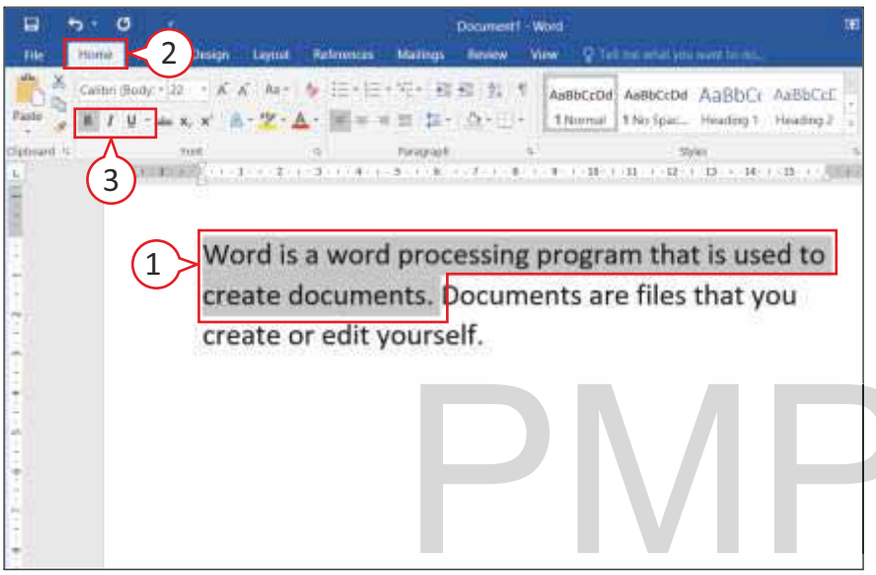
Long Selection

Word is a word processing program that is used to create documents. Documents are files that you create or edit yourself.

- **Drag** the mouse until you highlight the text you want to select.

BOLD, ITALIC AND UNDERLINE TEXT

You can use bold, italic or underline feature of Word to make your text dark, slant or underlined.



1. Select the text you want to change.
2. Click on **Home** tab.
3. Click on the following options:

Bold B

Italic I

Underline U

- **The text appears dark if you select Bold in step 3.**

A Word is a word processing program.

- **The text appears slanted if you select Italic in step 3.**

A Word is a word processing program.

- **The text appears underlined if you select Underline in step 3.**

A Word is a word processing program.

To remove the style, repeat the steps **1** to **3**.

Do You Know?

Keyboard shortcut to make the selected text bold is **Ctrl + B**.

Do You Know?

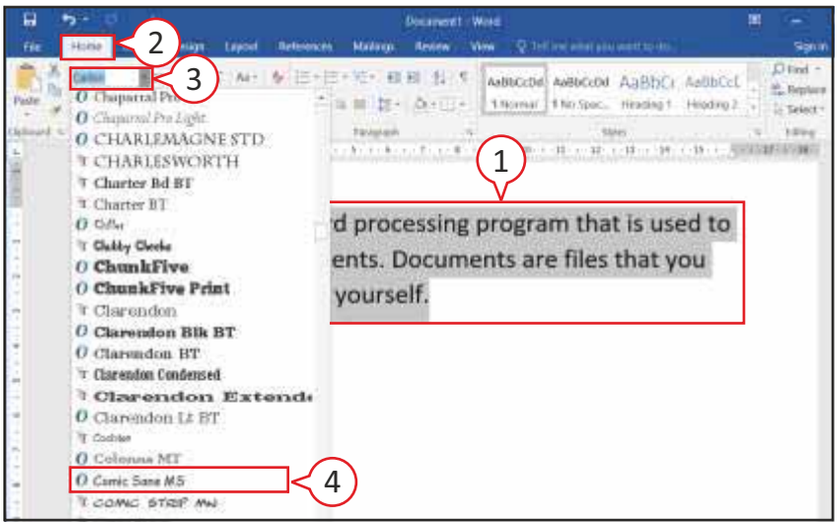
Keyboard shortcut to italicize the selected text is **Ctrl + I**.

Do You Know?

Keyboard shortcut to underline the selected text is **Ctrl + U**.

CHANGING FONT STYLE

You can apply a different style to text by choosing a different font.



1. Select the text.
2. Click on **Home** tab.
3. Click on **Font** option.

A list of Fonts appears.

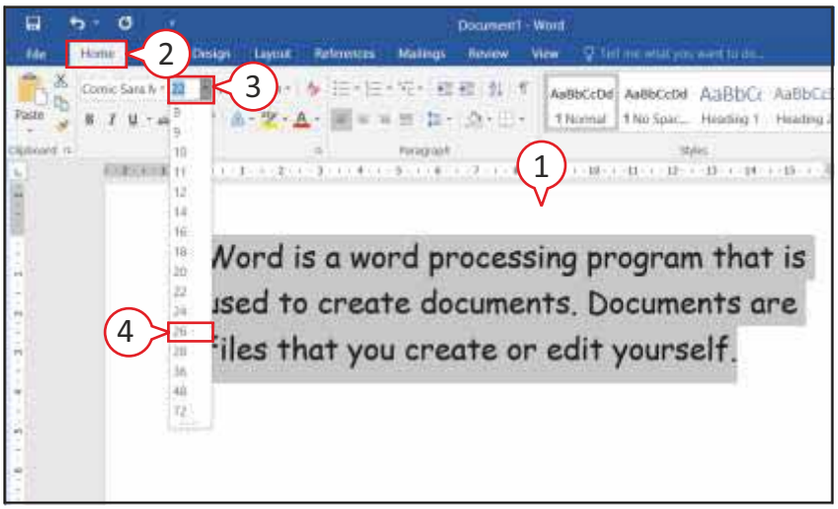
4. Click on the desired **Font**.

The text changes to the selected font.

To deselect the text, click outside the selected area.

CHANGING FONT SIZE

You can **increase** or **decrease** the size of text by choosing different font sizes.



1. Select the text.
2. Click on **Home** tab.
3. Click on **Font size** option.

A list of Font sizes appears.

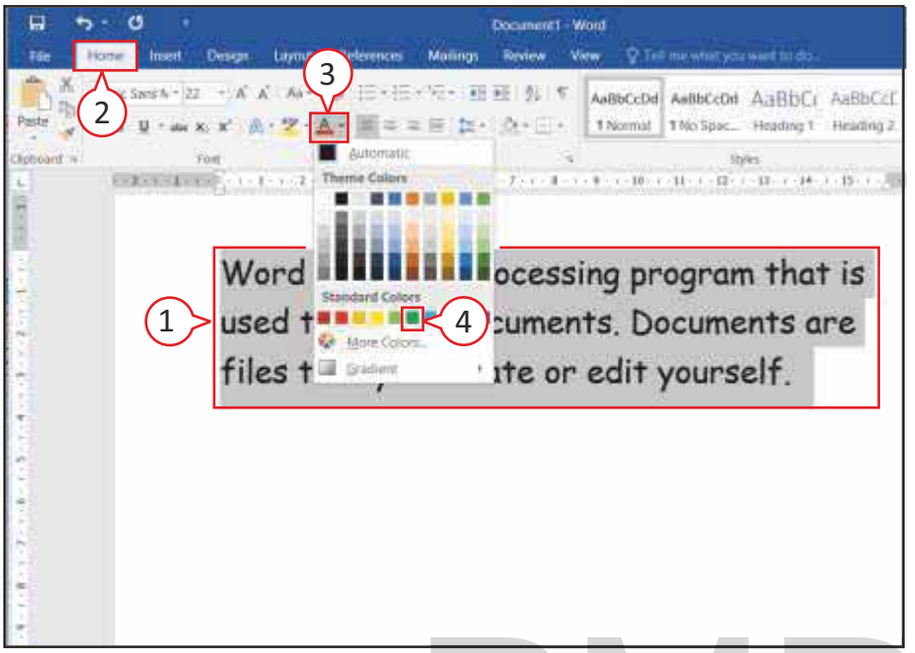
4. Click on the desired **size**.

The text changes to the selected size.

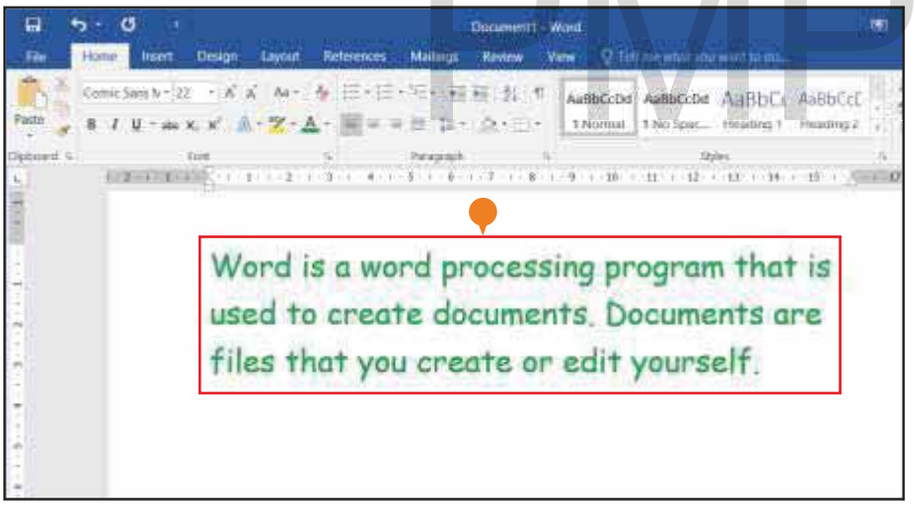
To deselect the text, click outside the selected area.

CHANGING FONT COLOR

You can change the color of your text to make it look more vibrant and eye-catching.



1. Select the text.
2. Click on **Home** tab.
3. Click on **Font color** option.
4. Click on the desired **color**.



- The text appears in the selected color.

To deselect the text, click outside the selected area.

Update Your Knowledge

MS-Word is used to create all kinds of documents like letters, reports, newsletters, etc.

Do You Know?

MS-Word was first released on October 25, 1983 under the name Multi-Tool Word.

Saving Your Work

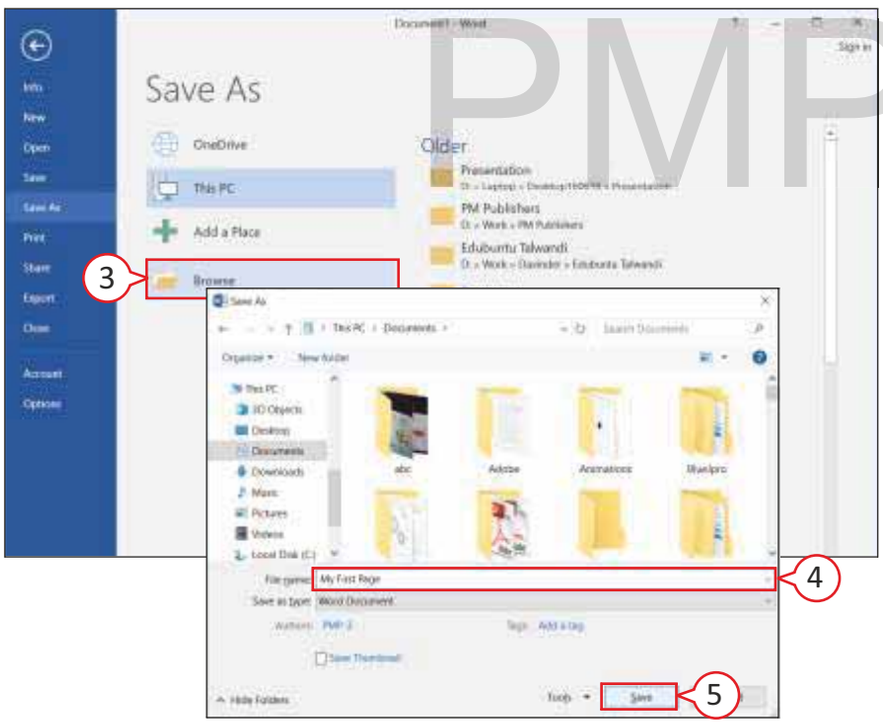
While working on Word, you must save your text in the computer for future use.

Storage is the process of saving your work permanently in a storage device like hard disk.

1. Click on **File** tab.

Backstage view appears.

2. Click on the **Save** or **Save As** button.



3. Click on **Browse**.

Save As dialog box appears.

4. In the **File name** text box, type a name for the file.
5. Click on **Save**.

Word saves the file and the new file name appears on the **Title bar**.

The file extension for Word file is .docx.

Update Your Knowledge

You can also save a document using **Ctrl + S** keys.

In a Nutshell

- Word is a word processing program used for creating documents.
- We can enter text in Word with the help of keyboard.
- The text must be selected before making any change in it.
- We can use bold, italic or underline feature to make text dark, slanted or underlined.
- We can change the style, size and color of the text in Word.
- Work should be saved in the computer for future use.

Exercises

A. Tick [✓] the correct answer.

1. ..... program is used to type letters, words and sentences.

   a. Word ☐ b. Paint ☐ c. Tux Paint ☐

2. ..... bar displays the name of the current document.

   a. Title ☐ b. Menu ☐ c. Status ☐

3. The text appears darker if you select ..... option.

   a. Italic ☐ b. Bold ☐ c. Underline ☐

4. Shortcut key for saving a document is ..... .

   a. Ctrl + Z ☐ b. Ctrl + R ☐ c. Ctrl + S ☐

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

1. Ribbon displays groups of related commands in tabs. ☐
2. To select a word, triple click on it. ☐
3. The text appears slanted when you select Bold option. ☐
4. Storage is the process of saving work permanently. ☐

C. Fill in the blanks.

1. T ..... T ..... E ..... A ..... is the topmost bar in Word window.
2. C ..... R ..... O ..... is a small vertical blinking line on the screen.
3. K ..... Y ..... O .... D is used to type letters, words, numbers, etc. on a computer.

D. Answer the following questions.

1. What do you mean by Word?

2. What happens if you click on bold and italic options?

3. Why do we change font color?

E. Application-based Question

Nidhi typed a rhyme in Word. She wants to keep it in her computer for future use. But she does not know how to do it. By which feature can she do so? Help her.

Activity Section

Lab Activity

Complete the following lines. Type them in Word and save the file as 'Myself'.

I am _____ .

PASTE YOUR PICTURE HERE

I am _____ years old.

The name of my school is _____ .

I am in class _____ .

_____ is my best friend.

I live in _____ .

I like to eat _____ .

I like to play _____ .

SUSTAINABLE DEVELOPMENT GOALS

5 GENDER EQUALITY

Skill Formation

- This activity develops self-awareness and enhances fine motor skills of students.

Subject Integration

English

Students will be able to complete a few lines about themselves and then type the same.

Worksheet-I

Chapters 1 - 4

A. Tick [✓] the correct answer.

1. The size of a smartphone is ..... than tablet PC.

   a. smaller ☐ b. bigger ☐ c. better ☐

2. ..... are used to give output in the form of sound.

   a. Speakers ☐ b. Printers ☐ c. Monitors ☐

3. ..... tool is available in Magic tool.

   a. Paint ☐ b. Fill ☐ c. Lines ☐

4. Click on the white space to the left of the line to select the ..... .

   a. word ☐ b. line ☐ c. paragraph ☐

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

1. Desktop computers are bigger than supercomputers. ☐
2. Hard copy is the information displayed on the monitor. ☐
3. Magic tool is used to add special effects. ☐
4. Saving is the process to store our work permanently. ☐

C. Fill in the blanks.

1. D .... S .... T .... computers are used in schools.
2. A P .... I .... T .... R is used to give output on a paper.
3. A computer stores our work in a S .... O .... A .... E device.
4. S .... A .... P tool is used to paste pre-drawn images in the drawing canvas.
5. R .... B .... O .... displays groups of related commands in tabs.

5 More on Paint

OBJECTIVES

After completing this chapter, you will be able to:

- Identify various components of Paint window.
- Understand the use of various options and tools in Paint.
- Save your drawing to view or modify it in future.

Hello Friends! In your previous class, you learnt how to draw different shapes and fill colors in them using Paint. Let us learn about some special features in Paint program.

Introduction

Paint is a drawing program that is used to draw and color objects like shapes, figures and cartoons. After drawing the objects, you can edit them by using different features, such as rotate, skew and flip, etc. available in Paint.

STARTING PAINT

Follow these steps to open Paint.

1. Click on **Start** icon to open Start menu.

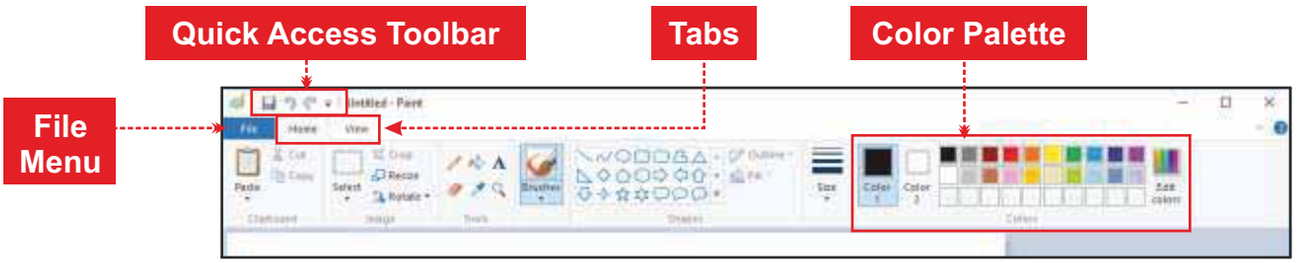
A list of all applications appears on the left.

2. Click on **Windows Accessories**.
3. Click on **Paint**.

The **Paint** program appears on your computer screen.

PAINT WINDOW

Given below is the Paint window. Let us know about the different components it has.



Quick Access Toolbar: On the top left corner, there is a **Quick Access Toolbar** with some of the most important buttons: **Save**, **Undo**, and **Redo**.

File Menu: Under the **Quick Access Toolbar**, the first button is the **File** menu, which opens up the main menu.

Tab: **Home** and **View** are two tabs in Paint. In the **Home** tab, you will get all the main image editing tools. In the **View** tab, you have options to zoom in/out or see the image in full screen mode.

Color Palette: **Color Palette** is used to select the color you want to work with. It contains two boxes: **Color 1** and **Color 2**.

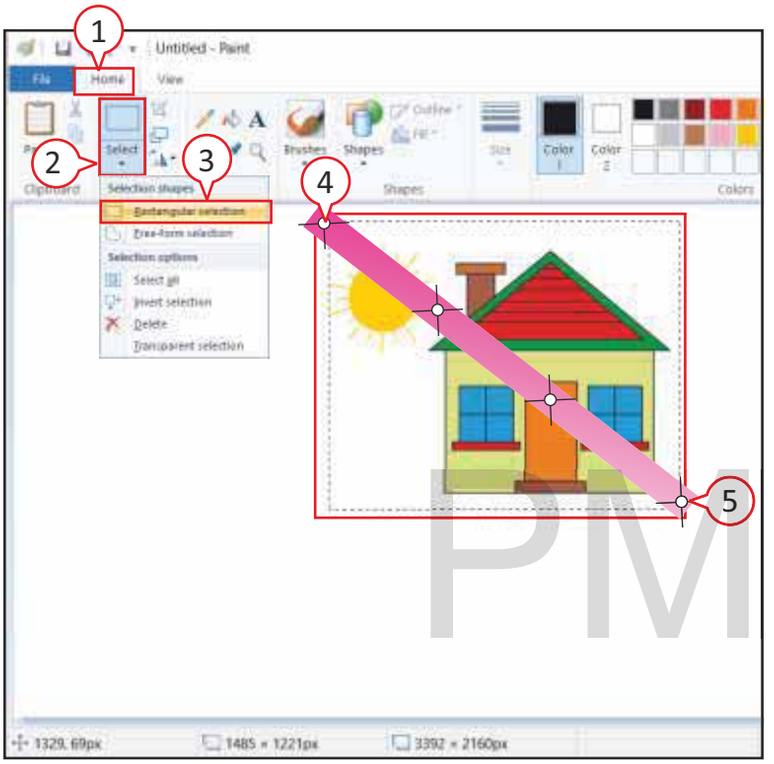
- **Color 1** box is the **Foreground color** or **Active color**. When you open Paint, the default active color is **black**.
- **Color 2** box is the **Background color**. When you open Paint, the default background color is **white**.

To change a color, make sure that its color box is selected, highlighted by yellow background. If it is not, simply click on it and then click on the color in the Palette.

Using Various Options in Paint

SELECT OPTION

This option is used to select a drawing or a part of it. After selecting the drawing, you can move it from one place to another in Paint window.



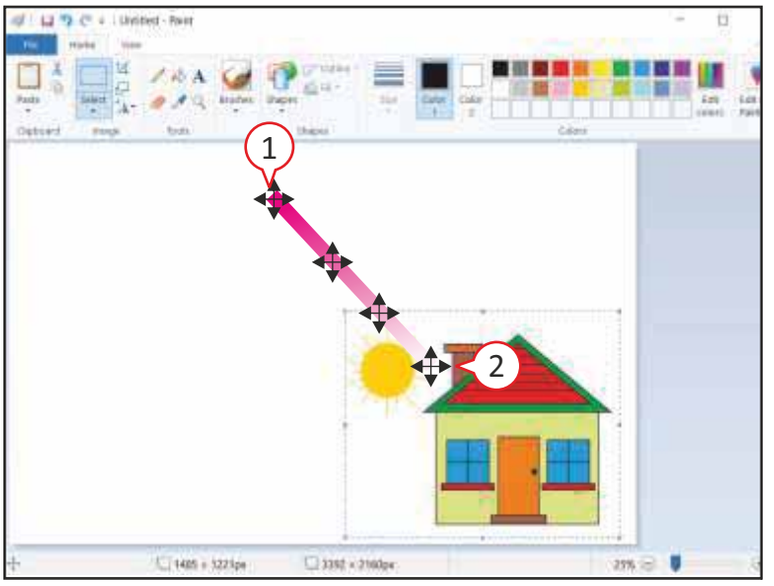
1. Click on **Home** tab.
2. Click on the down arrow (▼) of **Select**.
3. Click on the desired Select tool.

We have selected **Rectangular selection** tool.

4. Click and hold the left mouse button, and drag diagonally to select the object.
5. Release the mouse button.

The dotted rectangle shows that the object has been selected.

Move the Selected Object

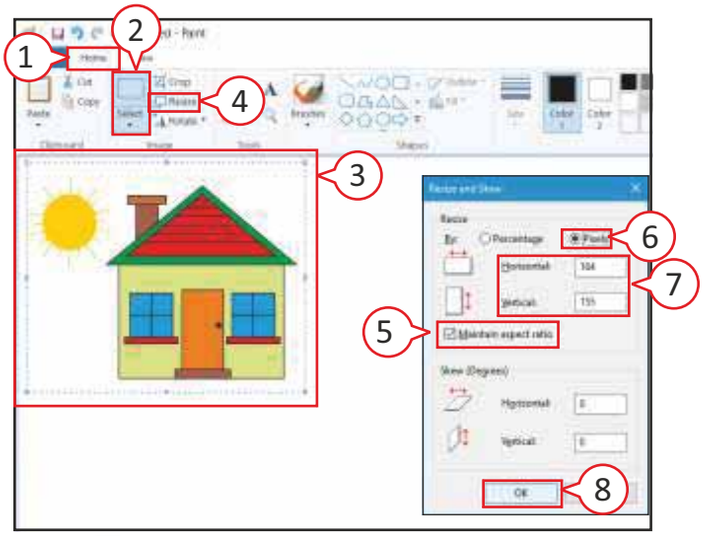


1. Click on the selection, and then drag the mouse to move the selection to another location.
2. Release the mouse button.

The object appears in the new location.

RESIZE OPTION

Resize is used to change the size of the drawing by making it smaller or bigger.



1. Click on **Home** tab.
2. Click on **Select**.
3. Select the image.
4. Click on **Resize**.

Resize and Skew dialog box appears.

5. Select the **Maintain aspect ratio** check box.
6. Select **Pixels** option.
7. Type the **Horizontal** and **Vertical** value.
8. Click on **OK**.

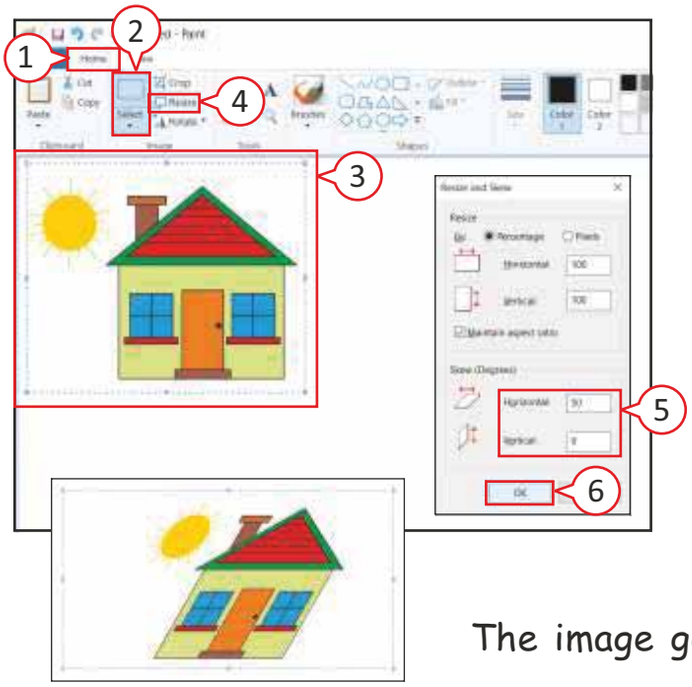
The image gets resized by the given value.

Update Your Knowledge

You may increase the selected image size by pressing Ctrl and + (plus), and decrease the selected image size by pressing Ctrl and – (minus).

SKEW OPTION

Skew is used to stretch an image from one end while the other end remains fixed.



1. Click on **Home** tab.
2. Click on **Select**.
3. Select the image.
4. Click on **Resize**.

Resize and Skew dialog box appears.

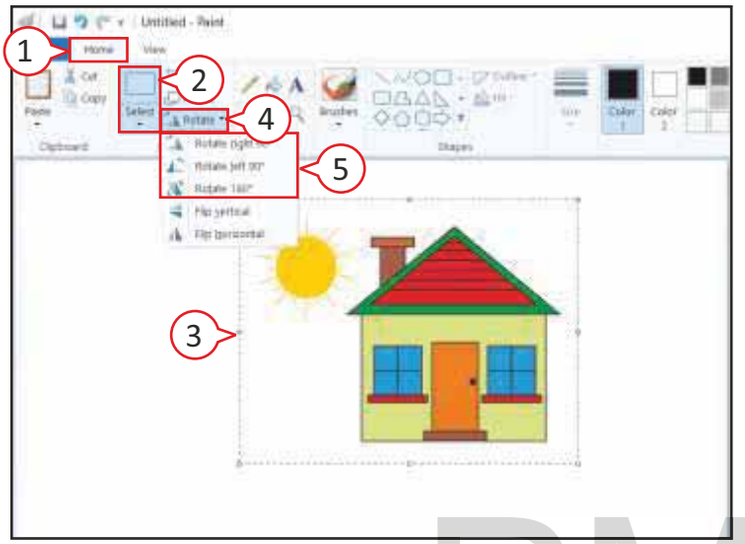
5. Type the amount of skew in the **Horizontal** and **Vertical** boxes.
6. Click on **OK**.

The image gets skewed by the given value.

ROTATE AND FLIP

Rotate feature changes the position of the picture to different angles. **Flip** feature creates a mirror image of the picture either horizontally or vertically.

Rotate Image

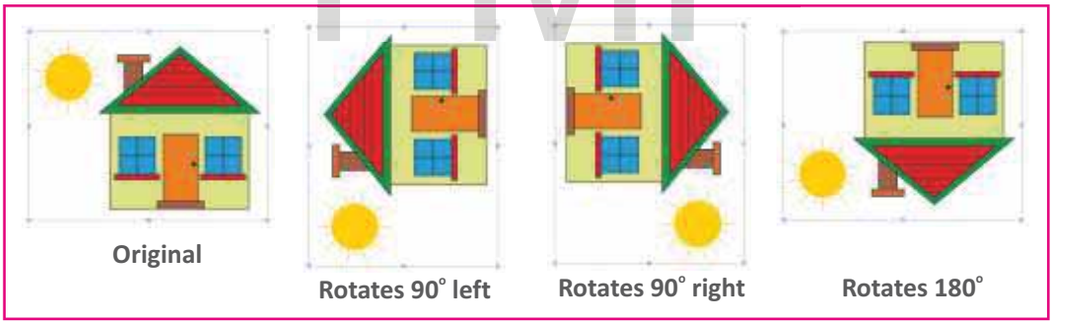


1. Click on **Home** tab.
2. Click on **Select**.
3. Select the image.
4. Click on **Rotate**.

Rotate and Flip options appear.

5. Click on the desired **rotate** option.

The image gets rotated by the selected angle.

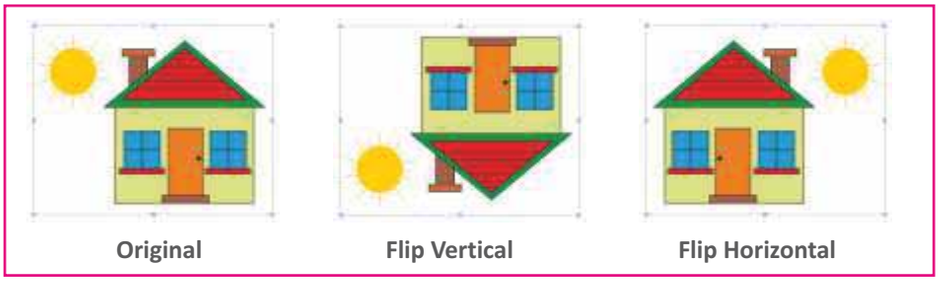


Available rotate options

Flip Image

Repeat the steps **1** to **5** and by clicking on **Flip** options in step **5**.

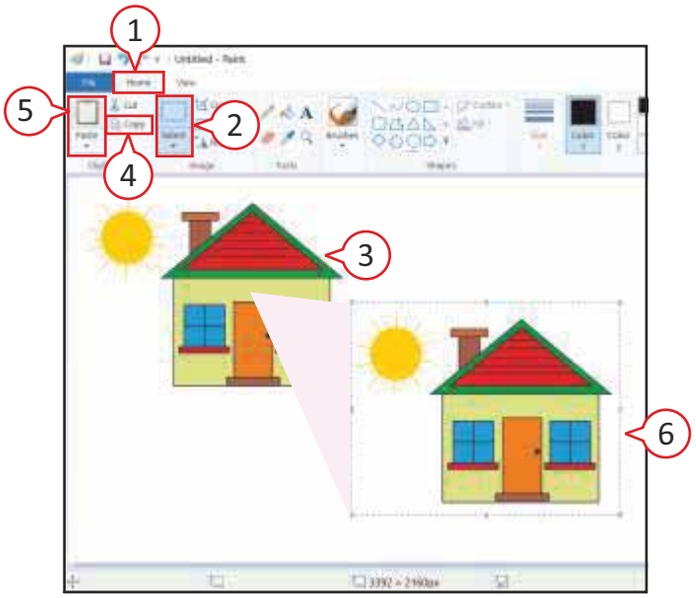
The image creates a mirror image by the given option.



Available flip options

COPY AND PASTE

Copy and **Paste** is used to copy the image from one place and paste it in another place. You can save your time by using this option, instead of drawing the image again and again.



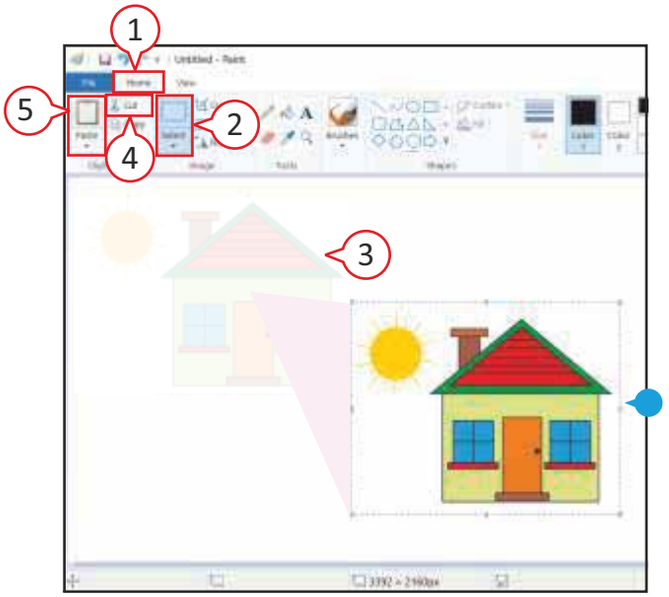
1. Click on **Home** tab.
2. Click on **Select**.
3. Select the image.
4. Click on **Copy**.
5. Click on **Paste**.

The image appears in the drawing area.

6. Now, place the mouse pointer on the selected image and drag it anywhere in the drawing area.

CUT AND PASTE

Cut and **Paste** is used to remove the drawing from its original place and paste it to another place in the drawing area.



1. Click on **Home** tab.
2. Click on **Select**.
3. Select the image.
4. Click on **Cut**.

The image disappears from the drawing area.

5. Click on **Paste**.

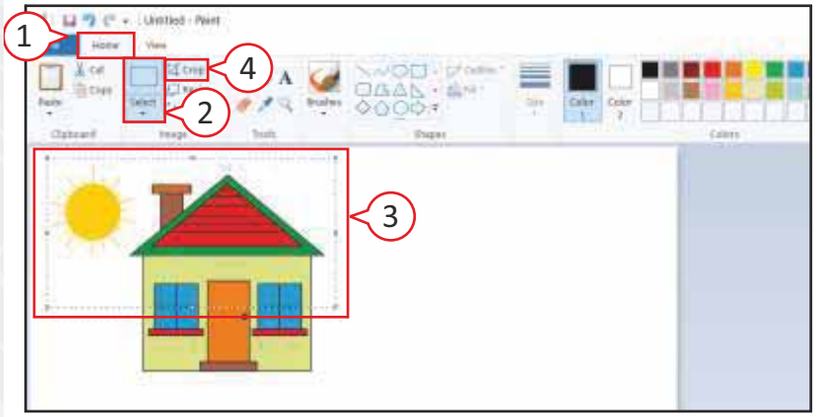
- The image appears in the drawing area. Now, drag it to place it at the desired place.

Update Your Knowledge

Shortcut key for **Copy** is **Ctrl + C**. Shortcut key for **Cut** is **Ctrl + X**. Shortcut key for **Paste** is **Ctrl + V**.

CROP IMAGE

Crop feature lets you see only the selected part of the image. After cropping, only selected part of the image is visible.

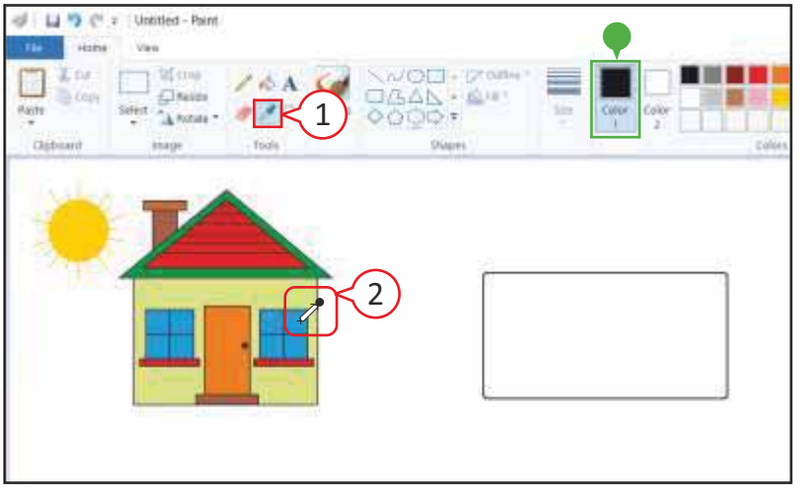


1. Click on **Home** tab.
2. Click on **Select**.
3. Select the part of the image you want to see.
4. Click on **Crop**.

- Only the selected part of the image appears.

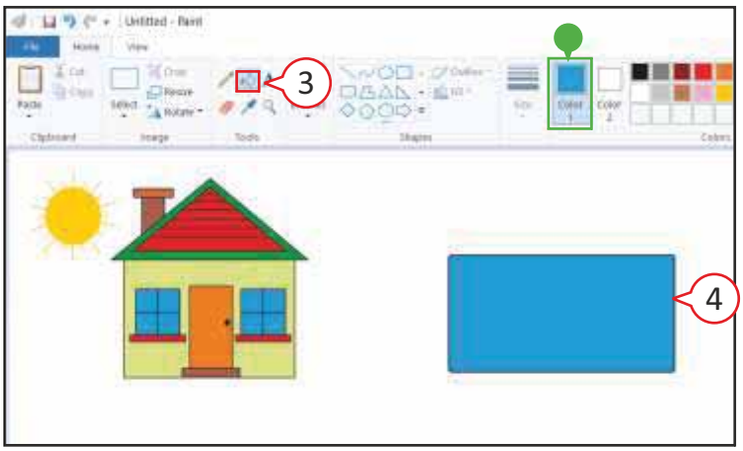
SELECT COLOR USING COLOR PICKER TOOL

You can pick a color from an open image or colored drawing with the **Color Picker** tool. This tool enables you to paint using a color already present in your image.



- The default active color is **black**.

1. Click on the **Color Picker** tool.
2. Place the tool over an open image, and click to select the color with the tip of the tool.



- The active color changes to the color you have selected.

3. Click on **Fill with color** tool.
4. Click inside the object where you want to color.

The object is filled with the color you selected with **Color Picker** tool.

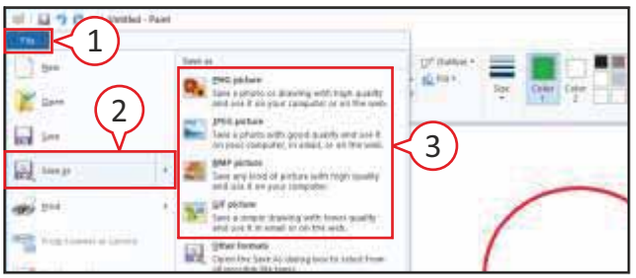
Saving Drawing

You must save your file so that you could view it or modify it in future. Follow these steps to save your drawing.

1. Click on **File** menu.
2. Click on **Save** option. The **Save As** dialog box appears.
3. Type the name for the image in **File name** text box.
4. Click on **Save** button to save your image. The file will be saved.

SAVING DRAWINGS IN DIFFERENT FILE FORMATS

Paint can save your drawing in multiple file formats such as JPEG, PNG, BMP and TIFF.



1. Click on **File**.
2. Click on **Save as**.
3. Select a **file format**.

The **Save As** dialog box appears.

4. Type the name for the image in **File name** text box.
5. Click on **Save** button to save your image. The file gets saved.

In a Nutshell

- Paint program is used to draw shapes, figures and cartoons.
- Skew option is used to stretch an image only from one end.
- Rotate command is used to change the position of the image to different angles.
- Flip command is used to create the mirror image of the picture.
- Crop feature lets you see only the selected part of the image.
- Color Picker tool is used to pick a color from an open image or colored drawing.

Exercises

A. Tick [✓] the correct answer.

1. ..... is a program used to draw and color objects.
   a. Paint ☐ b. WordPad ☐ c. Windows ☐
2. ..... tool is used to select a part or whole drawing.
   a. Resize ☐ b. Select ☐ c. Flip ☐
3. Dotted ..... shows that the object has been selected.
   a. circle ☐ b. triangle ☐ c. rectangle ☐
4. ..... feature creates a mirror image of the picture.
   a. Rotate ☐ b. Flip ☐ c. Copy ☐
5. Use ..... feature to see only the selected part of the image.
   a. crop ☐ b. resize ☐ c. skew ☐

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

1. View tab contains the main image editing tools. ☐
2. Skew command is used to stretch an image. ☐
3. Rotate feature creates a mirror image of the picture. ☐
4. You cannot move the selected image. ☐
5. Paint file can only be saved in PNG format. ☐

C. Fill in the blanks.

1. H ..... M ..... and V ..... E ..... are the two tabs in Paint.
2. Default foreground color of Paint is B ..... A ..... K and default background color is W ..... I ..... E.
3. C ..... L ..... R P..... C ..... E ..... tool picks a color from a colored drawing.

D. Answer the following questions.

1. What is the use of Paint program?
2. Name the buttons present on Quick Access Toolbar.
3. Why do we use copy and paste option?
4. Write the different file formats for saving a drawing in Paint.

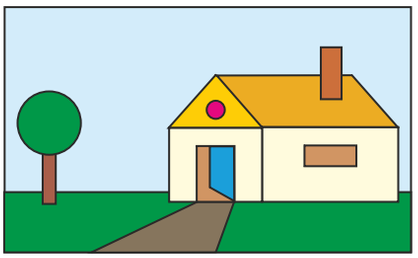
E. Application-based Question

Rakesh is drawing a traffic scene in MS-Paint. He has to draw many cars in it. Which option should he use so that he does not have to draw cars, again and again?

Activity Section

Lab Activity

Draw a colorful drawing of hut in Paint by using various tools.



Skill Formation

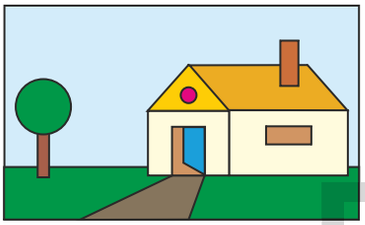
This activity enhances fine motor skills of the students and promotes creativity among them.

Art Integration

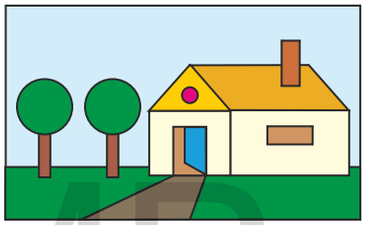
Students will learn to create drawing and color it using available tools in Paint.

After drawing,

1. Use Copy and Paste option to draw one more tree.

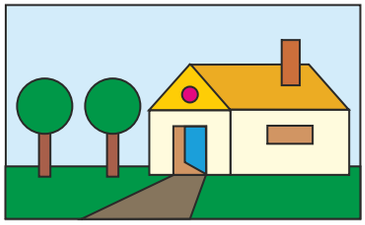


Original

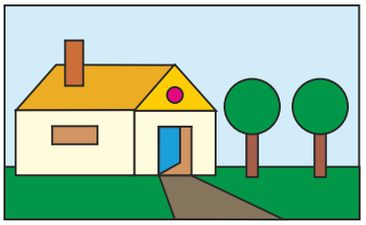


Copy and Paste tree

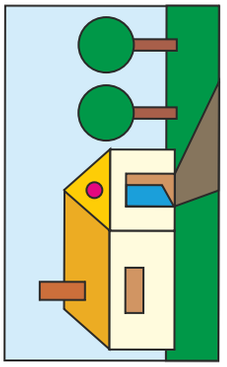
2. Select the image and then first apply Flip Horizontal feature, then rotate it to 90° left and 90° right.



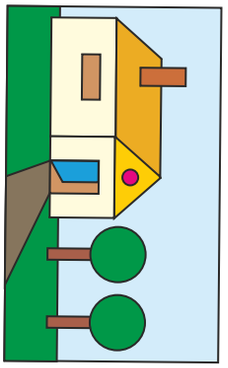
Original



Flip Horizontal



Rotate 90° left



Rotate 90° right

Group Discussion

Divide the students into groups and discuss the topic – 'Useful Features/Options in Paint'.

Online link

To learn more about fun with Paint, visit the website:
http://kidpid.com/fun-with-ms-paint/

6 Arrangement of Patterns

OBJECTIVES

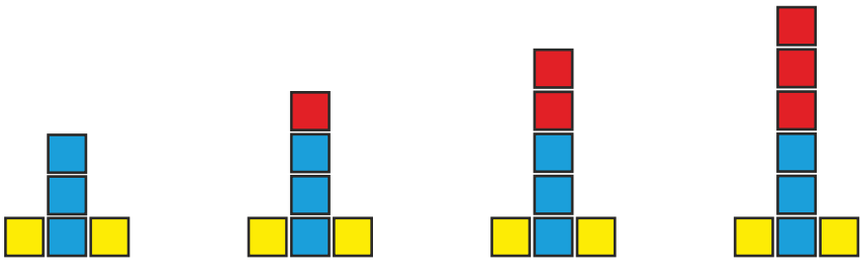
After completing this chapter, you will be able to:

- Understand about growing and repeating patterns.
- Understand decomposition.
- Code-decode using secret codes.

Hi Friends! You have already learnt about patterns in your previous class. Now, let us learn more about patterns and their arrangements.

Pattern

Patterns are regular arrangements of lines, shapes and colors. When something is added to a pattern every time, the sequence repeats. It is called a **growing pattern**. For example,



Here, at every occurrence, a red square is added to a pattern.

Pattern that repeats itself over and over again according to a certain rule is called **repeating pattern**. It does not add anything to itself. For example,

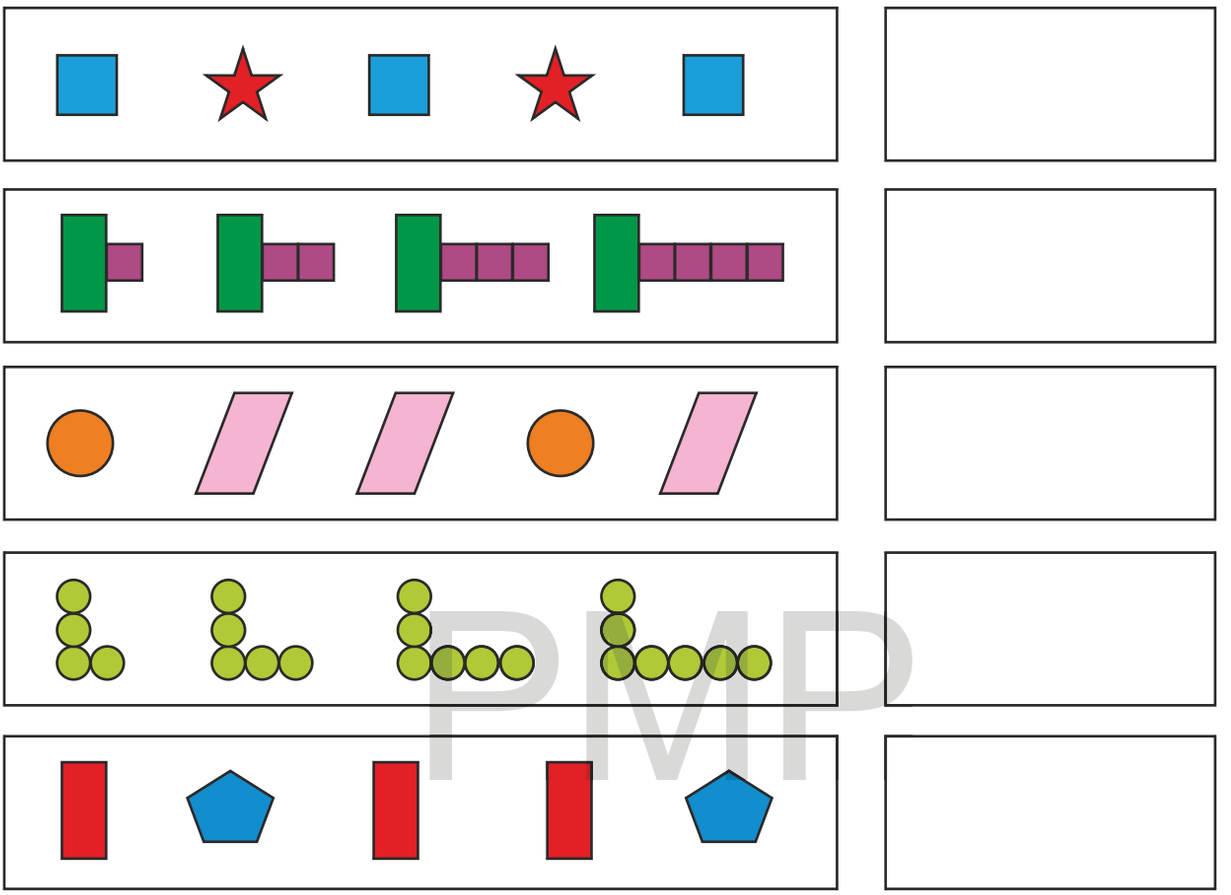
Here, you can see only two shapes (triangle and square) are repeating at each sequence. Nothing new is adding to it.

Understanding the patterns helps solve the instructions more quickly and efficiently.

Activity Drawing

GROWING AND REPEATING PATTERN

Draw and color the picture that comes next in each pattern.



Decomposition

Decomposition means breaking down a problem into smaller parts that are easier to understand.

Do you know we use decomposition in our daily lives too?

Let us decompose the process of how to brush our teeth.

- Take out your toothbrush.
- Wash it with clean water.
- Apply toothpaste on it.
- Gently brush your teeth with it.

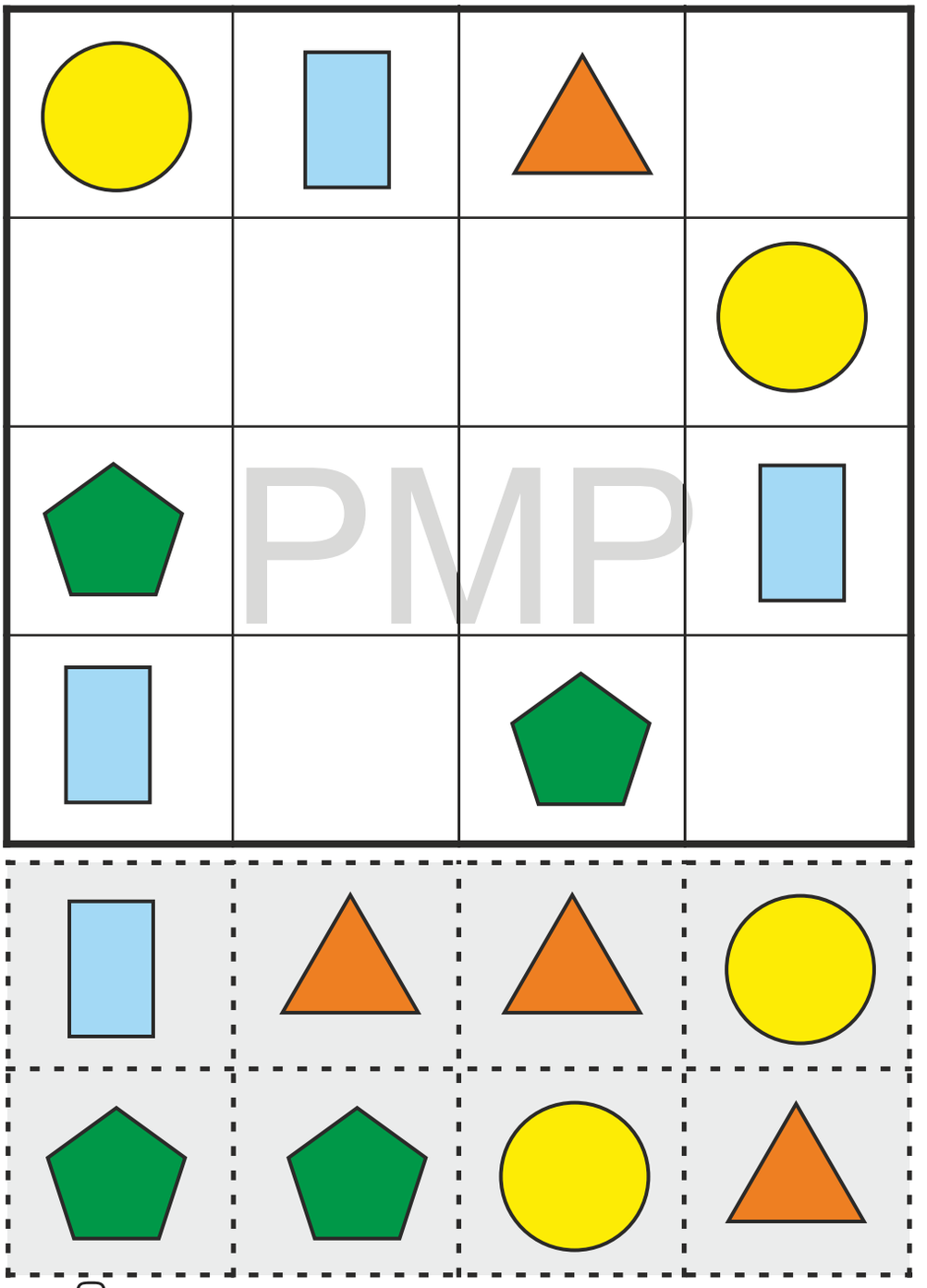
Decomposition is an important life skill needed to take on larger tasks.

Activity Find, Count and Write

Count and write the total number of each model of car.

Activity Sudoku

Complete the Sudoku using the shapes given at the end. Note that you can use each shape exactly once in each row, column and grid. Also color them accordingly.



Art Integration

Student will understand about various shapes, color them and place them correctly into Sudoku puzzle.

Code-Decode

Hey Friends! Do you enjoy sending messages to your friends? Of course, you do!

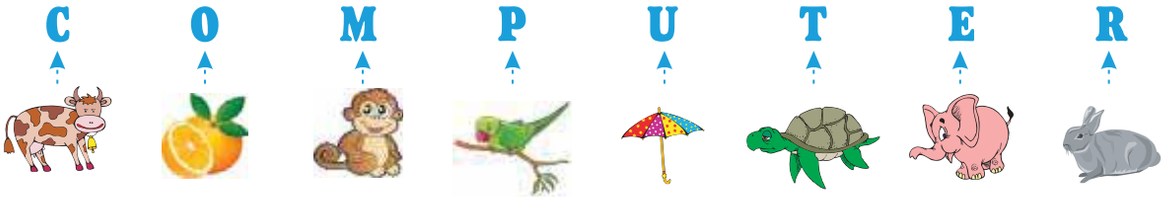
But what would happen if you send a message using secret code?

When we represent information using symbols or pictures, it is called **coding**. When we convert the information back to its original form, it is called **decoding**.

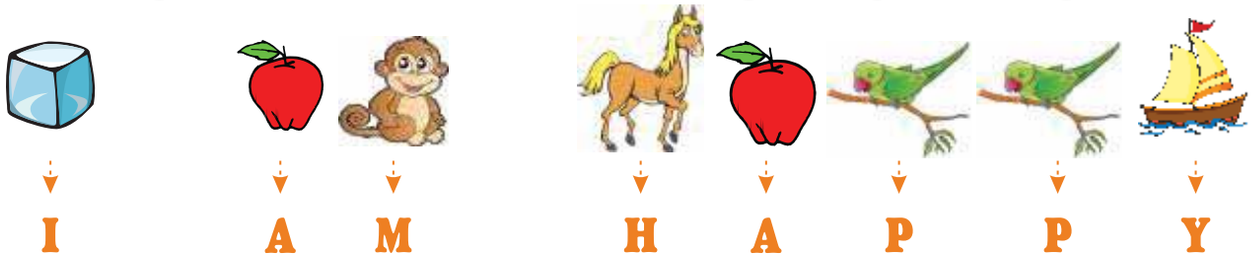
Now, let us understand how to create a secret code.

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

The letters of word COMPUTER are given the form of picture codes below.



A message is revealed after decoding the given images.

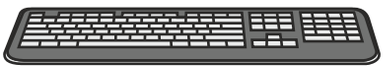


Coding-decoding helps you to learn how the information is secured. It also explains the work flow of the communication process.

Activity Code-Decode

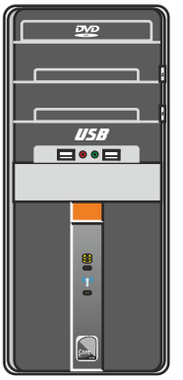
Look at the symbol given with each alphabet. Write the names of different parts of computer.

☺	☼	♦	✠	✡	☯	❖	⌘	◎	✦	⌑	⇳	⇘	⊙	□	✈	△
O	M	I	N	E	A	R	T	C	U	S	B	D	P	K	Y	L



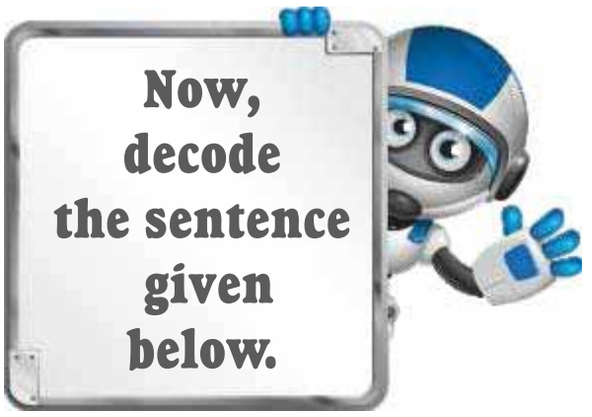
☼	☺	✦	⌑	✡
M				

□	✡	✈	⇳	☺	☯	❖	⇘



☼	☺	✠	♦	⌘	☺	❖

◎	⊙	✦



♦

△	♦	□	✡

◎	☺	☼	⊙	✦	⌘	✡	❖

COLOR CODE WITH MATHS

Find the sum and color the picture, using the color code.

1 + 2 = _____ Brown

1 + 0 = _____ Red

1 + 1 = _____ Yellow

3 + 1 = _____ Green

3 + 3 = _____ Blue

2 + 3 = _____ Black

Art Integration

Students will understand the concept of color-coding in coloring an image.

In a Nutshell

- Patterns are regular arrangements of lines, shapes and colors.
- Growing pattern and repeating pattern are two types of pattern.
- Decomposition is breaking down of a problem into smaller parts.
- Coding is the representation of information using symbols or pictures.
- Decoding is converting the information back to its original form.

Exercises

A. Write 'T' for True and 'F' for False statements.

1. Growing pattern does not add anything to itself. ☐
2. We use decomposition in our daily lives too. ☐
3. Coding represent information using symbols. ☐

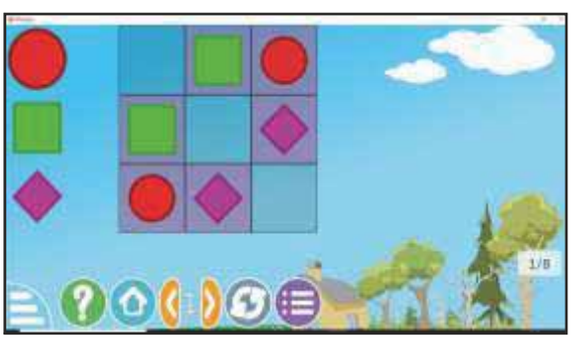
B. Fill in the boxes.

1. R P A I G patterns does not add anything to itself.
2. D C M O I I N makes things easier to understand.
3. When we represent information using symbols or pictures, it is called C D N .

Lab Activity

Open the Educational Suite GCompris [ ].

1. Click on this **icon** [ ] from the top of Gcompris.
2. Click on **Logic** [Logic].
3. Click on **Sudoku, place unique symbols in a grid** [ ].



PLAYING METHOD

You can play this game by selecting the symbols on the left and click in its target position. This game will not let you enter invalid answer.

This game requires logical ability.

Subject Integration

Mathematics

The students would be able to identify 2D shapes using GCompris (IT tool).

Skill Formation

Students would learn about decomposition which enhances their understanding of computational thinking.

7

Fun with ScratchJr

OBJECTIVES

After completing this chapter, you will be able to:

- Understand ScratchJr program and its working.
- Identify various components of ScratchJr screen.
- Use motion block to move sprite.
- Change sprite character and background of the stage.
- Create program on ScratchJr.

Hello Friends. Let us create animations, games and interactive stories with the help of ScratchJr.

Introduction to ScratchJr

ScratchJr is a fun-based programming language for kids. It enables the children of 5 to 7 years of age to create their own interactive projects through simple coding.

CODING

Coding (or computer programming) lets you use your thinking and express your ideas to create something in the computer. It empowers you to not only use technology but also to create it.

WORKING ON SCRATCH JR

You can work on ScratchJr by snapping the blocks together to make characters move, jump or dance. You can also modify the characters, change backgrounds, and add voices and sounds.

DOWNLOADING SCRATCHJR

ScratchJr is a free app which runs on **Tablet (Android)** and **iPad (Apple)**. You can download the app from the **App Store** for an iPad, and from the **Google Play Store** for an Android Tablet.

You can also download ScratchJr directly from the website: **www.scratchjr.org**.

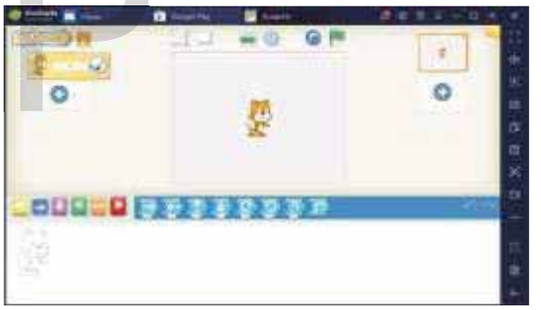
App Store

Google Play Store

ScratchJr on Tablet

Using ScratchJr on Desktop

ScratchJr is an app that runs on Tablets, but you can also use it on desktop by operating **BlueStacks** software. BlueStacks lets you run Android games and apps on a desktop computer.



Using BlueStacks

Beta version of ScratchJr

You can also download and run **beta version** of **ScratchJr** on the desktop computer by clicking on the link:

https://jfo8000.github.io/ScratchJr-Desktop/

In this version, the working of ScratchJr is the same but you will not see the original Scratch Cat in it.

Starting ScratchJr

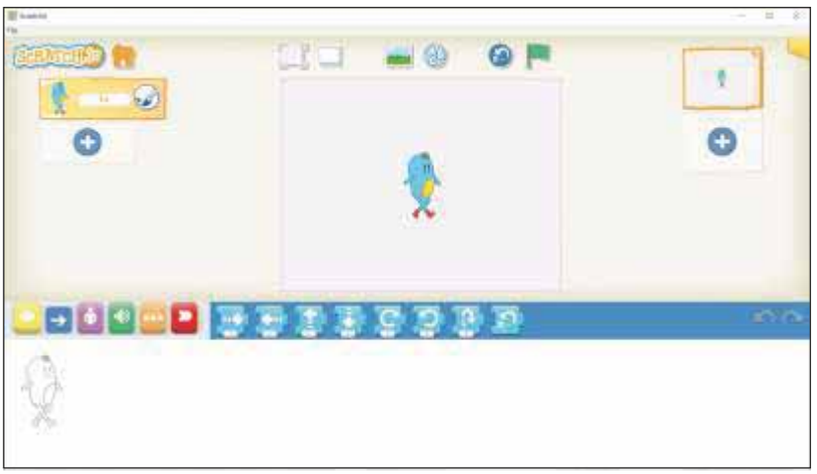
By default, ScratchJr is not installed on your device. You have to download it from the Internet and install it on your device.

This is the first screen you see when you open the ScratchJr app.

1. Click the **Home** button.

The home screen shows all of your saved ScratchJr projects.

2. Click the **plus sign** to make a new project.

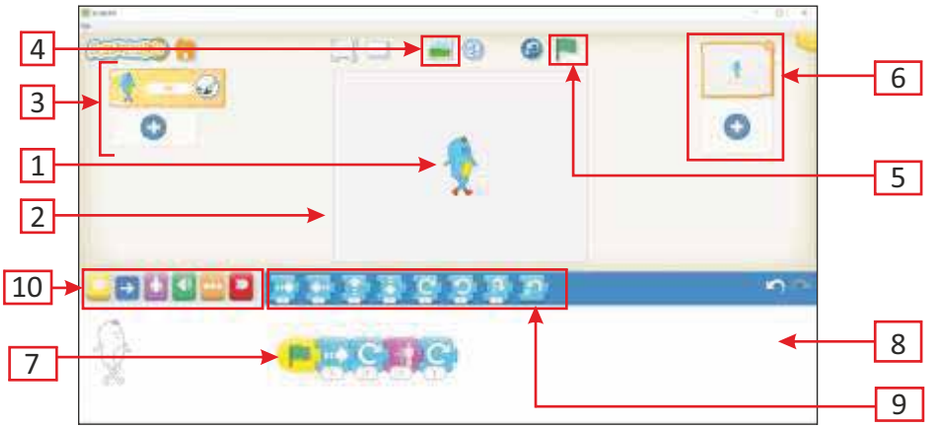


The **ScratchJr window** appears on the screen as shown on the left.

Now, you are all set to make amazing animations, stories, and games in ScratchJr.

ScratchJr Screen

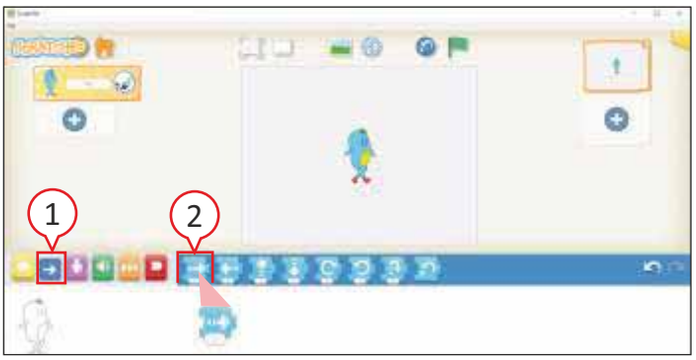
The different components of the screen have been labelled for you.



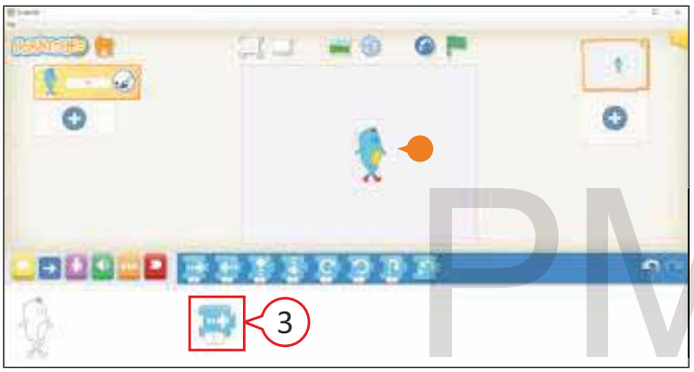
1. **Sprite:** It is a character that performs all the actions.
2. **Stage:** It is the place where you see your character or sprite move and interact with others.
3. **Sprite list:** You can add more sprites in your project from this list.
4. **Background:** You can change different backgrounds using this feature.
5. **Flag:** You can click on the green flag to start your main program.
6. **Pages:** You can use it to add new pages in the project.
7. **Script:** It is also known as **program**. It is a collective instruction given to the sprite in the form of stack of blocks.
8. **Script Area:** It is a place where you make your programs by assembling blocks.
9. **Blocks Palette:** This area shows you all the blocks available for use in your programming.
10. **Block Category:** This area lists the six categories of color-coded blocks — Triggering, Motion, Looks, Sounds, Control and End.

Moving the Sprite

Whenever you start ScratchJr, it starts with a new project containing the sprite. If you want to make the sprite move, use the motion blocks.

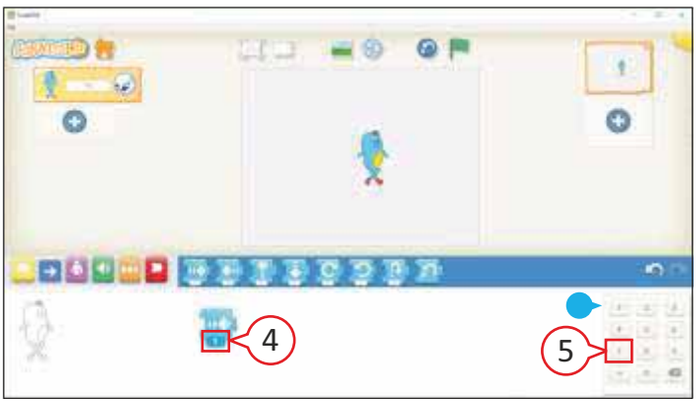


1. Click on **Motion** block.
2. Select **Move Right** block and drag the block from the Blocks Palette into the Script Area.



3. Click on the **Move Right** block.

- The sprite moves in the direction of the arrow.



4. Click on the number **1**.

- **Number pad** appears.

5. Click on number **7**.

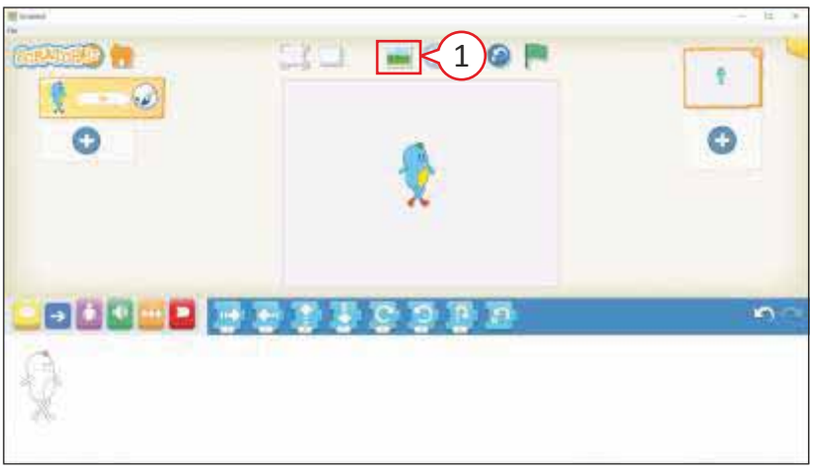
The number determines how far across the screen you want the sprite to move.

6. Click on the **Move Right** block again.

- The sprite moves according to the number and in the direction of the arrow.

Changing Background

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



1. Click on the **Background** button.

A screen appears, showing some backgrounds.

2. Click on the background you want to add.
3. Click on the **check mark**.

New background is added to the stage, behind the sprite.

Adding Another Character or Sprite

By default, Tic is the main character in ScratchJr. You can add more characters in your project.

1. Click on the **plus sign**.

A screen appears, showing many characters.

If you scroll down the page, you will see many more characters to choose from.

2. Click on the character you want to add.
3. Click on the **check mark**.

The new character always appears in the **middle** of the stage.

You can drag the new character to the place where you want it on the stage.

Creating a Program

When you click on a single block in the Script Area, the sprite moves immediately; it will only test what blocks do, but it is not a program.

Drag more blocks to the Script Area and snap them together to make a sequence of actions. This sequence of actions is called **script** or **program**.

1. Start a new project and change the background.

2. Click on **Triggering** block.
3. Select **Green Flag** block and drag it from the Blocks Palette into the Script Area.

4. Click on **Motion** block.
5. Select **Move Right** block and drag it to the Script Area and snap it with **Green Flag** block.

6. Click on the number **1**.

Number pad appears on the right.

7. Click on number **5**.

8. Click on **Looks** block.
9. Select **Grow** block and drag it to Script Area and snap it with **Move Right** block.

10. Click on **Motion** block.
11. Select **Hop** block and drag it to the Script Area and snap it with **Grow** block.

12. Click on **Looks** block.
13. Select **Say** block and drag it to the Script Area and snap it with **Hop** block.
14. Click on **Text**.

15. Use the **backspace** key to delete **hi**, and type **hello friends!**

Your script is ready. Now, you can run the script.

16. Click on **Flag** button.

The sprite now walks, grows, jumps and says "hello friends!" on the stage.

Notice that the script runs from the beginning and each block is highlighted as it runs.

Congratulations! You just made your first computer program!

In a Nutshell

- ScratchJr is a fun-based programming language for kids.
- You can work on ScratchJr by snapping the blocks together to make characters move, jump or dance.
- Sprite is a character that performs all the actions.
- Script is a collective instruction given to sprite in the form of stack of blocks.

- We can change the background of the stage to make it more interesting and lively.
- We can add more characters in the project.

Exercises

A. Tick [✓] the correct answer.

1. You can download ScratchJr app for an iPad from ..... .

   a. BlueStacks ☐ b. Google Play ☐ c. App Store ☐

2. Script is also known as a ..... .

   a. page ☐ b. program ☐ c. character ☐

3. ..... is the place where you make your program by assembling blocks.

   a. Script area ☐ b. Stage ☐ c. Sprite ☐

4. To make the sprite move, use the ..... blocks.

   a. Motion ☐ b. Looks ☐ c. Control ☐

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

1. ScratchJr can only run on Tablets. ☐
2. By default, ScratchJr is installed on your device. ☐
3. Blocks category lists the six categories of color-coded blocks. ☐
4. When the script runs, each block is highlighted. ☐

C. Fill in the boxes.

1. On desktop, B _ U _ S _ A _ K _ software is used to run ScratchJr.
2. S _ A _ E is the place where sprite moves.
3. By default, the background of the stage is W _ I _ E.
4. The sequence of actions is called S _ R _ P _ .

D. Answer the following questions.

1. What is ScratchJr?

2. List the names of color-coded blocks available in Block Category.

3. How do we make a sequence of actions?

E. Application-based Question

Tanya has created a program on ScratchJr. Now, she wants to run it. On which option should she click in order to do this task?

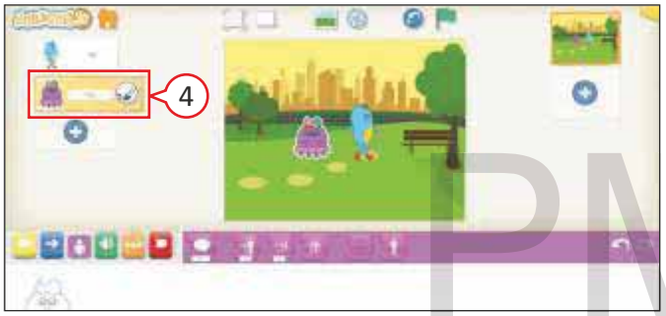
Activity Section

Lab Activity

Skill Formation

- This activity enhances logical thinking and problem-solving ability of students.

1. Add a background and two sprites.
2. In the **Sprite List**, click on the **Sprite icon** (Tic).
   - The selected sprite appears here.
3. Create a script in the **Script Area** for the selected sprite.



4. In the **Sprite List**, click on the other **Sprite icon** (Tac).

The script for the Tic disappears after you select a new character.

5. Create a script in the **Script Area** for the selected sprite.
6. Click on the **Flag** icon.

Art Integration

Student will use scripts for the selected sprites to make them move and talk on the stage.

Scratch executes all the joined-up blocks of both sprites, and you will observe both the sprites playing and greeting each other.

Group Discussion

Divide the students into two groups and discuss on the topic– 'ScratchJr is more Interesting than Tux Paint'.

8 Understanding AI

OBJECTIVES

After completing this chapter, you will be able to:

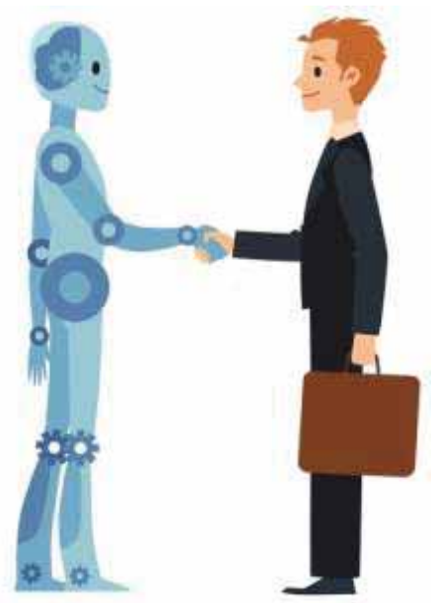
- Understand the concept of Artificial Intelligence.
- Differentiate between AI machine and normal machine.
- Applications of AI.

Hi Friends! In your previous class, you have already been introduced to AI. In this class, you are going to learn about applications of AI around us.

Concept of Artificial Intelligence

The ability to understand or to deal with changing situations is called **intelligence**.

Artificial Intelligence or **AI** is the ability of a machine to copy human intelligence.



In this process, a machine or robot is developed to think, behave and work like a human being.

The goal of AI is to make computers take **intelligent decisions**.

WHAT IS AN INTELLIGENT DECISION?

Intelligent decision is a sound decision based on **data** collected from personal experience and the experiences of others.

AI in Today's World

You must have seen or heard about the movie **Terminator**. This movie was based on AI robot programmed with human intelligence and emotions.

In reality, we have not achieved this level of AI till now. Scientists are working to make AI machines with human-like ability to gain and apply knowledge and skills. Let us learn what the scientists have been able to create in the AI field till now.

AI Machine and Normal Machine

In modern world, we find machines everywhere. But there is a big difference between a **normal machine** and an **AI-enabled machine**.

A normal machine is fed with **instructions**. When we activate it, it does the work based on only those instructions. But when such a machine is programmed with AI, it develops human understanding and behavior. For example:

A **normal music system** plays music through a CD or a DVD (instructions) that we insert in it.

A **smart music system** with AI plays music through human voice commands. Examples are Alexa, Google Nest and Siri.

Artificial Intelligence Around Us

From smartphones to smart homes, AI has made our life easier nowadays. Let us understand it with some examples.

AI IN DIGITAL ASSISTANTS

You must have heard of **Apple's Siri** and **Amazon's Alexa**. These two are the most famous AI personal assistants. They understand voice commands and complete tasks for the user, such as make a call or search information on the web. These assistants use AI to answer and perform various tasks.

Hey Siri

AI IN YOUTUBE VIDEO RECOMMENDATIONS

You might have seen that whenever you watch any video on **YouTube**, it suggests you similar kind of videos. How does YouTube get to know your likes? Well, it is AI that tries to understand your choice and suggests similar videos.

AI IN GAMES

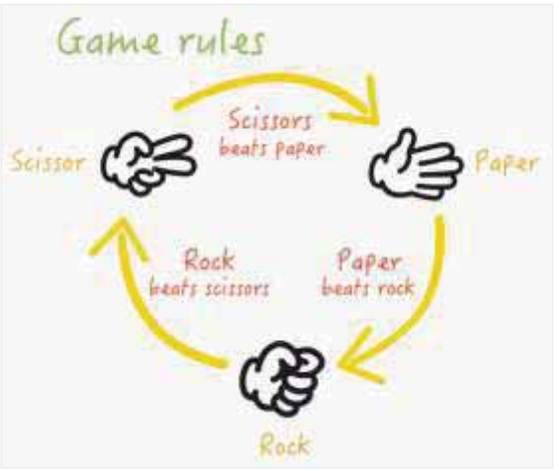
Majority of video games such as racing, shooting, etc. are powered by AI. Such games use AI to create close to reality gaming environment and maintain the interest of the players.

AI Lab

Let us play the following game based on AI technology.

ROCK, PAPER AND SCISSORS

Rock, Paper and Scissors is a very simple game. You can learn the basic principles of Artificial Intelligence technology through this game.



Game Introduction

This game is usually played by two players. In this game, the competing players use one hand to form one of the three shapes as shown in the figure.

This game has only three rules:

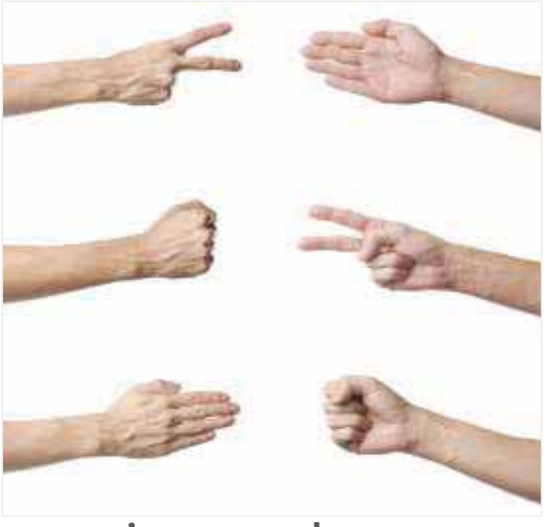
a) Scissors beat Paper by cutting it.

b) Rock beats Scissors by crushing them.

c) Paper beats Rock by covering it.

This game totally depends on guessing what the opponent will choose.

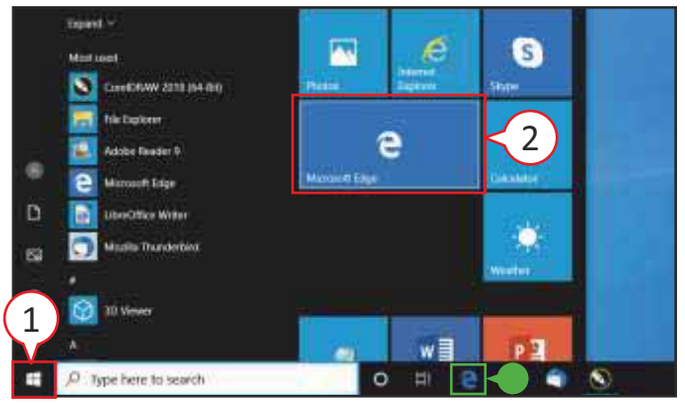
According to the guess, the players of the game make one of the three hand postures to defeat each other.



winner looser

How to Play Rock, Paper and Scissors Online?

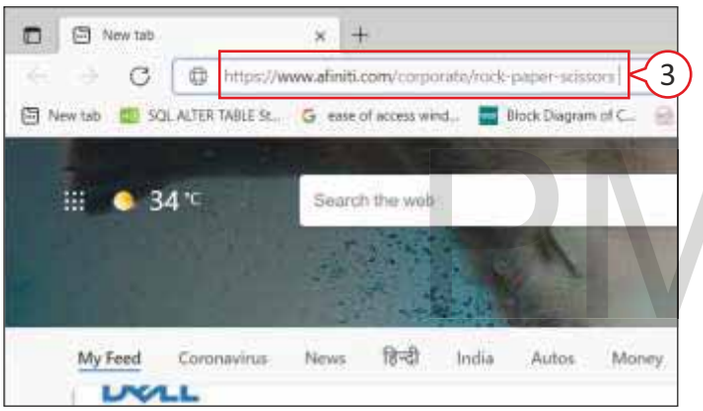
To start this game, you need a computer with Internet connection.



1. Click on **Start** icon to open Start menu.
2. Click on **Microsoft Edge**.

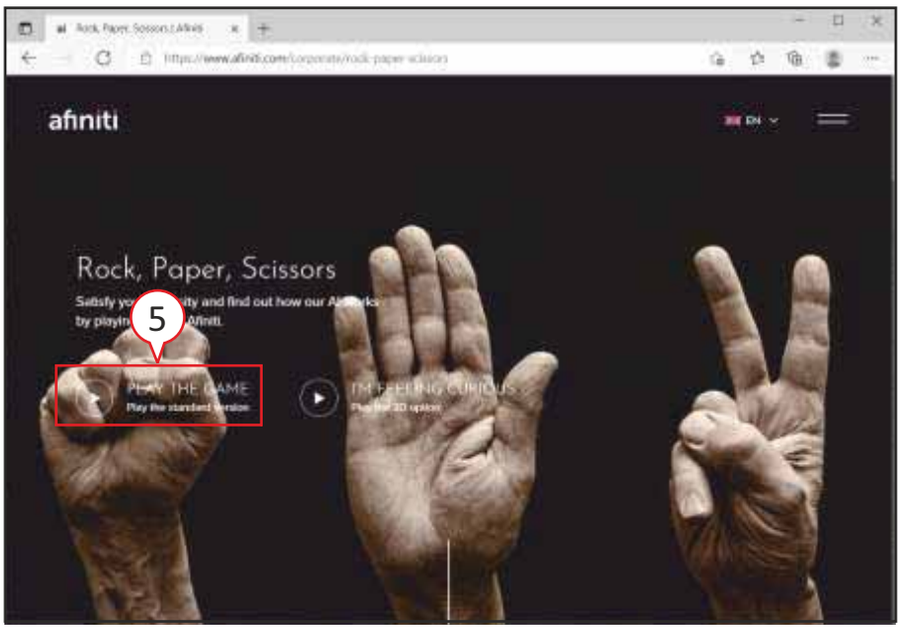
- You can also open Microsoft Edge by clicking on its icon on the **Taskbar**.

Microsoft Edge window appears.



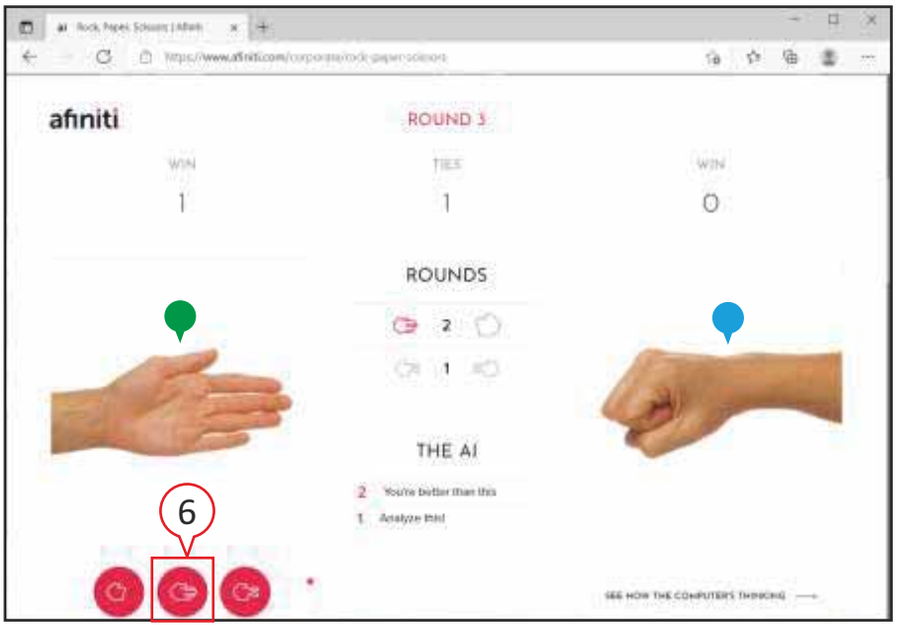
3. Click on **address bar** and type https://www.afiniti.com/corporate/rock-paper-scissors
4. Press **Enter** key from the keyboard.

Afiniti page of **Rock, Paper, Scissors** appears.



5. Click on **PLAY THE GAME** option.

The following screen shows two hands. Left-side hand represents the player and right-side hand represents AI-enabled computer.



6. Click on any red button:
   - Rock
   - Paper
   - Scissors
- The **left hand** works according to your selection in step 6.
- The **right hand** plays its turn.

In this example, we have chosen **paper** in step 6. Right hand of computer plays its turn and shows **rock**.

In this game you win because Paper beats Rock by covering it.

If both hands show the same pattern then it will be a tie.

After playing this game, you must have learnt how human mind works in certain patterns and how an AI-enabled machine detects those patterns to predict future outcomes.

Skill Formation

This game caters to the logical-mathematical intelligence by encouraging the students to use skills like strategizing and predicting sequences.

In a Nutshell

- Intelligence is the ability to deal with changing situations.
- The goal of AI is to make computers take intelligent decisions.
- Siri and Alexa are the most famous AI personal assistants.
- AI video games create close to reality gaming environment.

Exercises

A. Tick [✓] the correct answer.

1. Artificial Intelligence is a machine's ability to ..... human intelligence.

   a. destroy ☐ b. copy ☐ c. increase ☐

2. An AI-programmed machine develops human understanding and ..... .

   a. emotion ☐ b. behavior ☐ c. voice ☐

3. AI-powered games maintain the ..... of the players.

   a. interest ☐ b. relations ☐ c. balance ☐

4. In Rock, Paper and Scissors game, ... beats Rock by covering it.

   a. Scissors ☐ b. Wood ☐ c. Paper ☐

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

1. There is no difference between a normal machine and an AI-enabled machine. ☐
2. A music system gives output in the form of text. ☐
3. Siri and Alexa are famous AI personal assistants. ☐
4. Majority of video games are powered by Artificial Intelligence. ☐
5. Rock, Paper and Scissors game teaches the basic principles of AI technology. ☐

C. Fill in the boxes.

1. The skill or ability to deal with changing situations is called

   | I | | T | | L | | I | | E | | C | |

   .

2. A normal electronic machine is fed with

   | I | | S | | R | | C | | I | | N | |

   .

3. A smart music system with AI plays music through human voice C _ M _ A _ _ S .

4. YouTube suggests similar kind of V _ D _ O _ .

D. Answer the following questions.

1. What is the goal of Artificial Intelligence?

2. Give two examples of AI in our daily life.

3. What does the game Rock, Paper and Scissors depend on?

E. Application-based Question

Priya is looking for a smart home product which could aid her in completing day-to-day tasks such as making a call, searching information on the web, playing music and doing much more on her voice commands. Can you suggest any AI-based product to her?

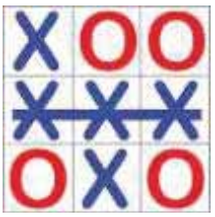
Activity Section

Lab Activity

Skill Formation

- This activity enhances the situation based decision-making capability of students.

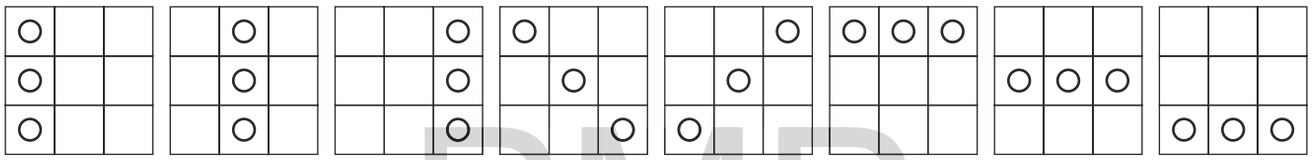
Tic-Tac-Toe



In your free time, you must have played 'Tic-Tac-Toe' game in your notebook. You can play and enjoy this game online too.

Introduction

Tic-Tac-Toe is a two-player game that is played on a 3x3 grid. Each player takes turns to mark X and O on the empty spaces in the grid. The rule to win this game is that the player must place three of their marks in a horizontal, vertical, or diagonal row as shown below.



If all the nine squares are filled without 3 in a row, it is a tie.

How to Play Tic-Tac-Toe Online?

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

1. Click on **Start** button to open Start menu.
2. Click on **Microsoft Edge**.
3. In the **address bar**, type https://gametable.org/games/tic-tac-toe/.
4. Press **Enter** key from the keyboard.

TIC TAC TOE screen appears.

5. Click on **One Player**.

Difficulty Level screen appears.

6. Select your level (Easy).

Now play the game by clicking in the grid. Each time you click in the grid, computer plays its turn.

The player who completes a row wins.

Worksheet-II

Chapters 5 - 8

A. Tick [✓] the correct answer.

1. ..... helps you to fill colors in your drawing.

   a. Crop ☐ b. Color Palette ☐ c. Skew ☐

2. ..... are regular arrangement of lines, shapes and colors.

   a. Polygons ☐ b. Patterns ☐ c. Triangles ☐

3. ScratchJr app runs on the ..... .

   a. server ☐ b. smartphone ☐ c. tablet ☐

4. ..... is a famous AI personal assistant.

   a. Alexa ☐ b. Sophia ☐ c. Bella ☐

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

1. Save command is present in Quick Access Toolbar. ☐
2. Rotate feature creates a mirror image of the picture. ☐
3. We use decomposition in our daily life too. ☐
4. In ScratchJr, sequence of actions is called a script. ☐
5. A normal machine is fed with instructions. ☐

C. Fill in the blanks.

1. S .... E .... option is used to stretch an image from one end.
2. C .... O .... feature is used to see only the selected part of the image.
3. When something is added to a pattern every time, it is called a G .... O .... I .... G pattern.
4. Using BlueStacks software, we can use ScratchJr on D .... S .... T .... P .
5. Y .... U .... U .... E suggests us similar kind of videos.

Additional Information

Educational Games – Tux Typing & Tux Math

Tux Typing is a game for kids to improve **typing** skill and Tux math is used to improve **math** skills. These software help children get familiar with the keys on the keyboard. These are free software and are part of **Tux4Kids** projects.

TUX TYPING

There are two different types of games in Tux Typing called **Fish Cascade** and **Comet Zap**. Both games have three levels of difficulty, so that they can be played by the children of different age groups.

To start Tux Typing, first turn on your computer and then follow the steps given below:

1. Click on **Start** icon. A list of all programs appears on the left. You can scroll down to see Tux Typing.
2. Click on **Tux Typing** icon. **Tux Typing** screen appears.

3. Click on the **game** that you want to play, for example, Fish Cascade.

The **skill levels** screen appears.

4. Click on the **level** that you want to play, for example, Easy.

New screen appears.

5. Click on the **category** of your choice.

*If you select **Alphabet**, then different alphabets (like A, B, C) will appear.*

- The game begins; letters on the fish start dropping from the top of screen.

6. Press the correct letter (R) on the keyboard.

As you press the right letter, **Tux penguin** positions itself to eat the fish.

Repeat **step 6** until the Tux penguin eats all the fish.

When all the fish are eaten, then **"Congratulations"** is displayed and you move to the next level.

If you are unable to complete the level, then **"Oh No!"** is displayed and the same level appears all over again.

TUX MATH

To start Tux Math, first turn on your computer and then follow the steps given below:

1. Click on **Start** icon. A list of all programs appears on the left. You can scroll down to see Tux Math.
2. Click on **Tux Math** icon.

Tux Math screen appears.

Tux of Math Command appears on the screen.

3. Click on **Play Alone** option.

4. Click on **Math Command Training Academy**.

The next screen displays all additional options. You can select the option based on your age level.

5. Click on **Addition Sums to 10**.

- You can click on **Next** [ ] button to see more options. For example, subtraction, multiplication and division.

After completing step **5**, the game begins.

- The numbers on the comet with addition symbols start falling from the top of the screen.

Quickly calculate the answer (e.g., '2 + 8' would be '10'), type it with the keyboard and press the **Enter** key.

- The number you type appears in the **LED display**. After pressing the **Enter** key, the Tux penguin shoots down the comet with laser.

- If the comet hits the igloo before you answer the sum, igloo **melts partially**.

If the same igloo is hit by another comet, it **melts completely** and the penguin walks away. Once all the igloos get completely melted, the game ends, as shown.

To go to the **Main Menu**, press the **Esc** key on the keyboard.