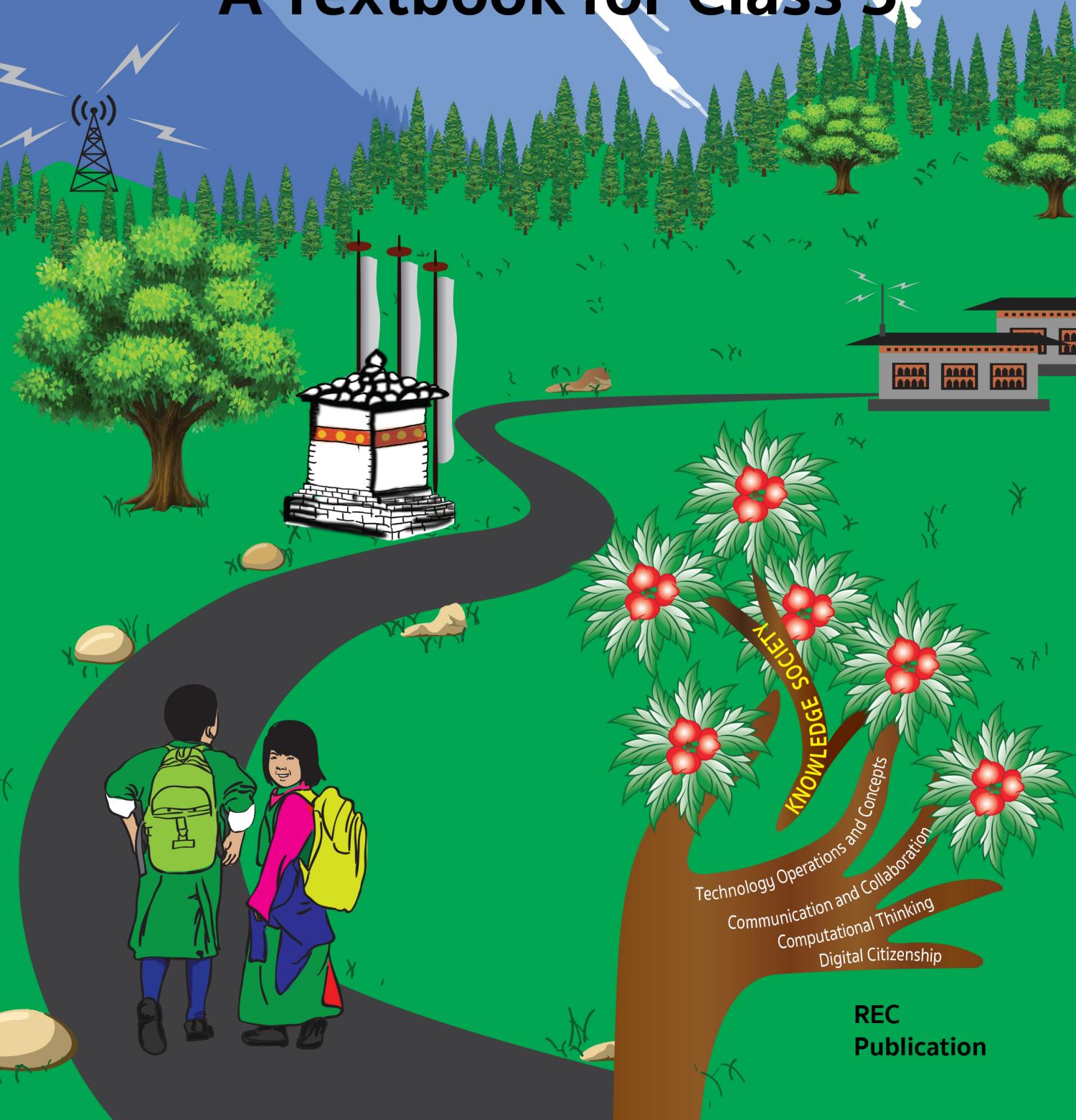


Literacy with ICT

A Textbook for Class 5



Technology Operations and Concepts
Communication and Collaboration
Computational Thinking
Digital Citizenship

REC
Publication

Literacy with ICT

A Textbook for Class V

**Royal Education Council
Paro**

Literacy with ICT

A Textbook for Class V

Provisional Edition 2016

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Royal Education Council
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28 September 2016

Foreword

Over the years, Information and Communication Technology (ICT) has greatly impacted all aspects of our lives. With the emerging new technologies, the world has become more connected and information more digital, greatly influencing the way people learn, live, work and communicate. Learning in and for the 21st century requires today's students to be discriminating users of information, creative problem solvers, skilled creators of knowledge, and effective communicators. Literacy with ICT is increasingly becoming an essential skill to participate productively in the 21st century knowledge society, in addition to the conventional literacy of reading, writing, and numeracy.

The existing ICT curriculum in schools was introduced in 2002 to equip students with knowledge and skills relevant for the world of work then. The needs have, however, changed over the years but the curriculum has not been able to maintain pace with the change, especially in the area of emergent and immersive technologies such as social media.

The development of new ICT curriculum has been in progress since 2014 to address the curricular gaps mentioned above. Drawing ideas and inspiration from various international educational technology standards and best practices, the ICT Curriculum Framework for Classes IV to XII was developed in 2014. Based on the framework, the writing of textbooks from classes IV to XII was initiated from 2015.

The approach adopted in the new textbooks is a departure from procedure-oriented teaching and learning. The textbooks are designed with emphasis on “competencies” – being able to “do” than “know”, thinking critically, being analytical, solving problems and creating knowledge by sharing and communicating with each other.

I am hopeful that the new curriculum will pave the way forward in our continuous strive to understanding the risks of the digital world as well as its opportunities to achieving the promises of technology to transform learning and living.



(Kinga Dakpa)
DIRECTOR

Introduction

The present society is characterised by its focus on information, its creation, dissemination and utilization. It lays emphasis on knowledge to drive economy by fostering innovation and entrepreneurship. Information and Communications Technology (ICT) plays an important role in making the needed information and knowledge easily accessible. ICT has become an important enabling tool to create and share information in this 21st century society.

Increasingly, children will be exposed to ICT in their daily lives. Education also must move forward to bring essential ICT skills to classrooms so that children can participate effectively in knowledge society.

ICT education has moved from ICT literacy to literacy with ICT, from "demonstrating ICT skills to choosing, using and sharing ICT, responsibly and ethically, to support critical and creative thinking about information and about communication across the curriculum" (Literacy with ICT Across the Curriculum, 2006). This shift does not belittle the importance of ICT literacy. It still is an integral foundation of literacy with ICT.

Literacy with ICT provides our children with the skills and knowledge they need to take part in inquiry in knowledge society. Children learn to discern information critically, produce knowledge creatively, and collaborate with others. Being able to produce information is not enough. Using ICT responsibly and safely is a vital attribute of a good 'digital citizen' in the 21st century.

Although literacy with ICT will be taught as a separate subject, the emphasis is on applying the skills across the curriculum. Where possible, attempts have been made to integrate topics from other subjects to provide authentic learning to children.

Using the Textbook

Each chapter starts with learning objectives to inform both students and teachers of content they are going to deal with. Student activities are interspersed in the chapters for students to link prior knowledge and skills with new content, or to practise new skills after demonstrations. Activities are of two types: **Try This On Machine**, which requires use of computer, and simply **Try This**, which generally involves individual or group work without the use of computers.

The main learning points covered in the chapter are summed up in **Now You Know**. The **Check Your Progress** at the end of chapter checks for the student's general understanding of knowledge and skills covered. Activities are mostly straight forward. There are another type of student exercises listed under **Explore Further** towards the end of the chapter. These exercises are designed to extend the knowledge and skills beyond what students learned in the chapter. Often the exercises are set in context of the content from other subjects to promote authentic, interdisciplinary learning. The idea is to use ICT as an enabling tool to explore learning across the curriculum.

Some secondary information related to the topic are shown in boxes as **Do You Know?** **Caution** and **Tips** boxes are used to inform students of risks, and words of advice or useful information. Where there is a need to inform the teacher of preparation required, a **Teacher's Note** is provided in each chapter. There is also a section of web links given at the end of each chapter for teachers to check out on the chapter topics.

Finally, there is the **End Of Year Activity** which is similar to Explore Further exercise except that it requires children to apply the key skills they acquired over the year. Teachers may choose to create their own activity, modelled on the sample activity included in the book. Teachers could use this activity to test children's performance.

The book is so designed that it can be covered in one year, with one class per week.

The table given below is an overview of the concepts, skills and values covered in each chapter.

Chapter	Knowledge	Skills	Values	Weeks
1. How Computer Works	<ul style="list-style-type: none"> * Computer hardware * Functions of peripheral devices * IPO cycle * Input and output devices. 	<ul style="list-style-type: none"> * Identification of parts of computer * Identification of input and output devices * Correct usage of computer 	<ul style="list-style-type: none"> * Team work 	3
2. Introduction to MS Word	<ul style="list-style-type: none"> * Word Processor * Basic Commands in MS Word 2007 	<ul style="list-style-type: none"> * Creating and editing text * Formatting Text * Developing dzongkha keyboarding skills * Indicate ownership of work 	<ul style="list-style-type: none"> * Ownership * Importance of Dzongkha 	5
3. File and Folder Management	<ul style="list-style-type: none"> * Files and Folders * User account * Password 	<ul style="list-style-type: none"> * Renaming files and folders * Moving or deleting files and folders * Creating a secure password 	<ul style="list-style-type: none"> * Importance of user account and password 	3
4. Be an Explorer	<ul style="list-style-type: none"> * Web browser * Common features of web browser * Search Engine * Keyword * LAN messenger 	<ul style="list-style-type: none"> * Browsing websites. * Using search engines to find text and pictures * Using keyword to search on Internet * Communicating using LAN messenger 	<ul style="list-style-type: none"> * Collaborating using LAN messenger 	4
5. Animate with Scratch	<ul style="list-style-type: none"> * Motion blocks * Sound blocks * Looks blocks 	<ul style="list-style-type: none"> * Using motion blocks * Adding sound and speech bubbles in animation * Modifying appearance of the object 	<ul style="list-style-type: none"> * Sharing of information * Acknowledging source of information 	4

Chapter	Knowledge	Skills	Values	Weeks
6. Control your Animation	<ul style="list-style-type: none"> * Pen blocks * Control blocks * Event blocks * Algorithm 	<ul style="list-style-type: none"> * Changing appearance and behaviour of Sprite and Stage using conditions * Developing algorithms to solve problems * Use appropriate blocks in Scratch to complete the task 	<ul style="list-style-type: none"> * Working systematically * Thinking algorithmically to solve problem * Exchanging of ideas 	4

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1

HOW COMPUTER WORKS



In this Chapter

- 1.1 Computer Hardware
- 1.2 Information processing by a computer

Learning Objectives

1. Describe computer hardware and software.
2. Sort peripheral devices into input, output and storage devices.
3. Describe the functions of peripheral devices.
4. Explain the Input Process Output (IPO) model.

1.1 Computer Hardware

A computer system consists of two major elements, **hardware** and **software**. We need both hardware and software for a computer system to work. Computer hardware consists of parts of a computer and the devices connected to it. Monitor, mouse, keyboard, printer, system unit, scanner, projector, central processing unit (CPU) and hard disk are some examples of computer hardware.

Software is a set of instructions that makes computer hardware do a specific task. For example, printer requires printing software to print images and documents. Many small software can be combined to form a large software like operating system, which can perform several tasks. Unlike hardware, we cannot touch or feel software.

Peripheral devices are devices which are externally connected to a computer. These devices can be:

- » **Input devices** which are used to enter data and instruction into a computer,
- » **Storage devices** which are used to store data and
- » **Output devices** which are used to display or produce information from the computer in the form understood by us.

Some of common **peripheral** devices and their functions are:

A. Scanner

Scanner is a device that is used to convert printed materials like films, photographs, magazines, books, etc., into digital images and texts. Digital images and



Figure 1.1 Scanner

texts can be viewed and edited in a computer. A common scanner is shown in **Figure 1.1**.

B. Webcam

Webcam is a small camera connected to a computer. It is used to capture photos, record and transmit videos. Webcams are commonly used in video chats. They are also used for observing and recording events. A webcam is shown in **Figure 1.2**.



Figure 1.2 Webcam

C. Microphone

Microphone is shown in **Figure 1.3**. It is used to feed in voice or other sounds into the computer which can be recorded and transmitted.



Figure 1.3 Microphone

D. Printer

Generally, printers are used for printing text or pictures onto paper. Texts and pictures can also be printed on other materials like cloth and plastic sheets. There are different types of printers such as, dot matrix, ink jet and laser printers as shown in **Figure 1.4 (b)**.

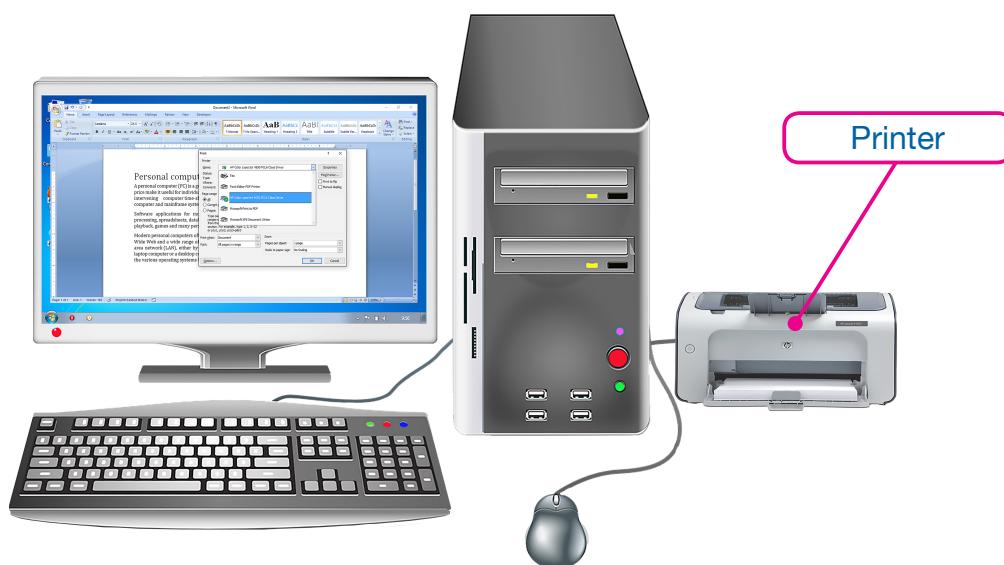


Figure 1.4(a) Computer system with a printer.

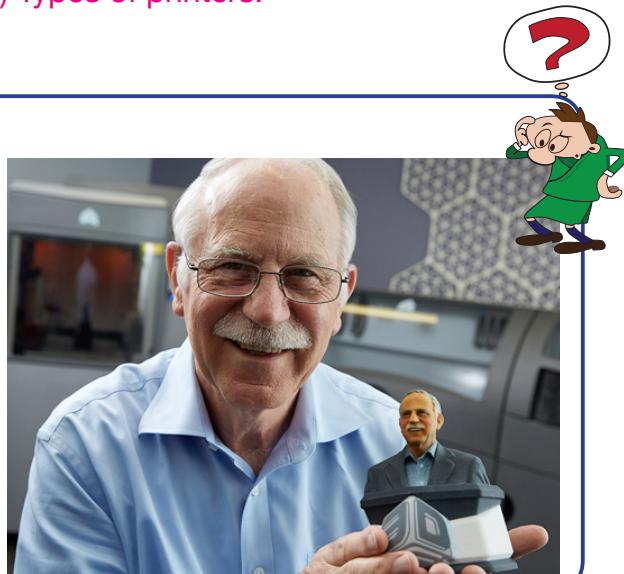


Figure 1.4(b) Types of printers.

Do You Know?

There are printers which can print 3-D objects as seen on the computer. These printers are known as 3D printers.

It was invented by Chuck Hull in 1983.



E. Speakers

Speakers give sounds while playing songs, movies or games on the computer. An example of speakers is shown in Figure 1.5.



Figure 1.5. Speaker

F. Projector

Projector is used to display information from the computer in an enlarged form onto a screen or wall as shown in Figure 1.6. It is used to present information to a large audience or watch videos.



Figure 1.6 Projector

G. External Storage Device

External storage devices like hard disk and flash drives (also known thumb drive, pen drive or stick drive) are used to store documents, photographs and videos. Some external storage devices are shown in Figure 1.7.



Figure 1.7. External storage devices.

Some peripheral devices are combined to form a single peripheral device that can perform many functions. For example, headset is a single peripheral device which functions as both speaker and microphone. Similarly, a projector may display and produce sound. While in some computers, such as laptop and smart phone, peripheral devices like keyboard, webcam, speaker, microphone, monitor and touchpad (mouse) are inbuilt in the computer itself.

Try This

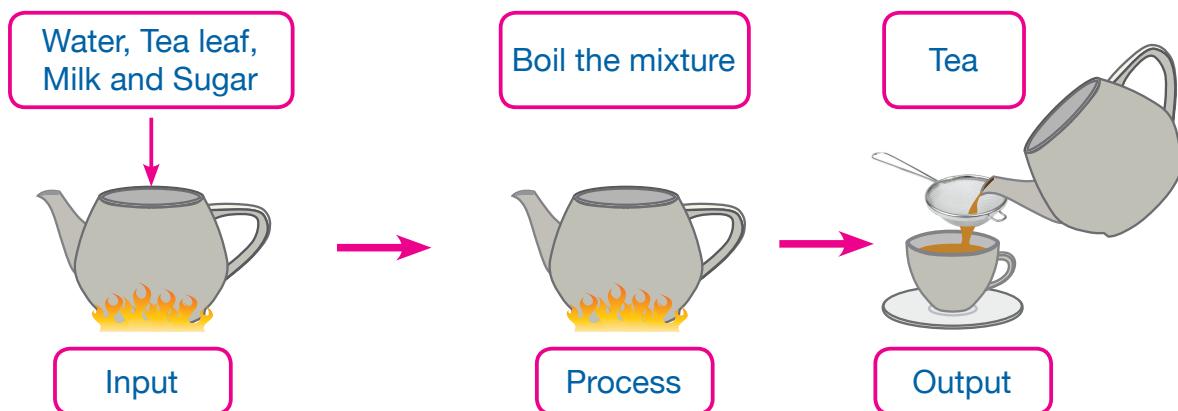
Sort the peripheral devices given below as input, output and storage devices in tabular form.

External storage device, Projector, Speaker, Microphone, Scanner and Printer.

1.2 Information processing by a computer

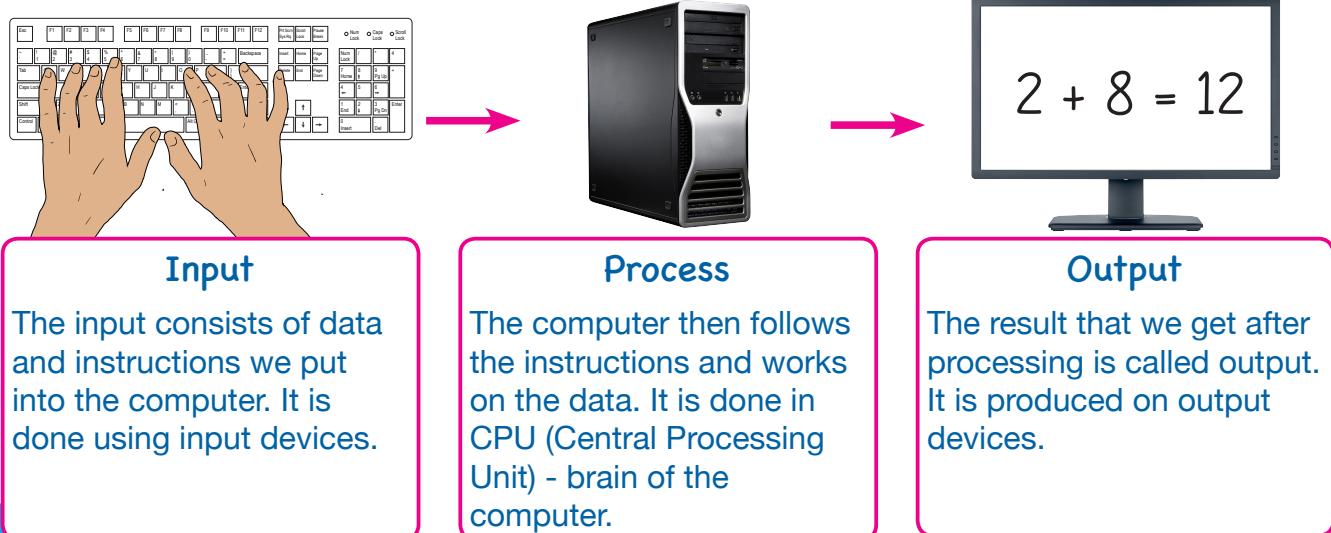
A computer is an electronic device that accepts data through an input device, processes it in system unit and gives an output through an output device. It processes information in three stages: **Input**, **Process** and **Output**. In short this process is called **IPO model**.

Let us look at an example of IPO model in our day-to-day activities. The process of preparation of tea take place as follows:



- » **Input:** Add water, tea leaves, milk and sugar in the pot.
- » **Process:** Boiling of the mixture.
- » **Output:** Tea.

Similarly, in computer, the process of finding sum of two numbers follows IPO model as shown below:



- » **Input:** Enter two numbers and instruct computer to add.
- » **Process:** Addition of two numbers.
- » **Output:** Sum of two numbers.

A computer is an electronic device that accepts data through input devices, processes it in system unit and gives an output through an output device.

Try This

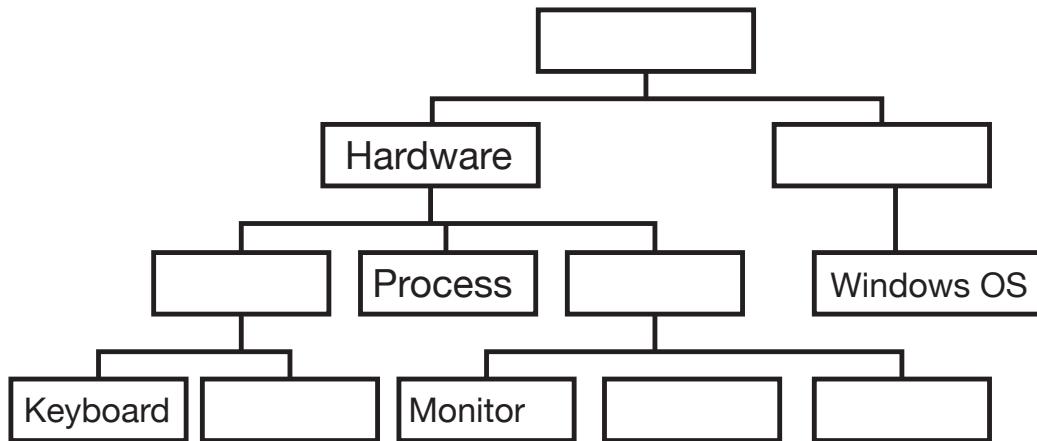
1. Identify input, process and output stages in generation of electricity in hydro-power station.
 - Turning of turbine
 - Electricity
 - Water from dam
2. Think of a task to be done using a computer. Break down the task into input, process and output stages.

Now You Know

1. Computer hardware is the physical part of the computer that can be touched.
2. Printer, scanner, external storages devices, webcam, microphone and projector are some examples of peripheral devices.
3. Data can be entered in the computer using input devices like keyboard, scanner, webcam and microphone.
4. Data processing is done by the CPU.
5. Monitor, printer, speaker and projector are output devices.
6. Computer accepts data, processes it and gives an output.

Check Your Progress

1. Write the function for the following devices:
 - (a) Scanner
 - (b) Speaker
 - (c) Webcam
2. Complete the tree diagram using the following terms:
Software, Computer, Input, Output, Mouse, Speaker, Printer.



Explore Further

1. There are different input, output and storage devices used in computer other than the ones discussed in this chapter. List them in a table.

Weblinks

1. Computer Hardware - Components, Definition & Examples

- 📎 <http://education-portal.com/academy/lesson/what-is-computer-hardware-components-definition-examples.html#lesson>

2. Input and output devices

- 📎 <http://ecomputernotes.com/fundamental/input-output-and-memory/list-various-input-and-output-devices>

3. Input-Process-Output Cycle

- 📎 <http://ict.stmargaretsacademy.org.uk/computing/hardware/ipo.html>

4. Input-Process-Output Cycle

- 📎 <http://www.mjpagedesign.com/images/print/Sample3.pdf>

2

INTRODUCTION TO MS WORD

In this Chapter

- 2.1 Introduction to Word Processor
- 2.2 Introduction to MS Word
- 2.3 Features of MS Word Window
- 2.4 Basic Commands in MS Word 2007
- 2.5 Formatting in MS Word
- 2.7 Editing Texts
- 2.8 Typing in Dzongkha

Learning Objectives

1. Describe word processing software.
2. Use word processor to create and edit a document.
3. Apply basic formatting tools to format text.
4. Type text in Dzongkha.

2.1 Introduction to Word Processor

Try This On Machine

You have already learnt and used Notepad in Class IV. Now type the part of poem "**All the Places to Love**" written by **Patrica Mac Lachlan** given below in Notepad exactly as shown below.

All the Places to Love by Patricia Mac Lachlan

Genre: **Poetry - Lyric**

On the day I was born
My **grandmother** wrapped me in a blanket
made from the wool of her sheep.
She held me up in the open window
So that what I heard first was the wind.
What I saw first were all the places to love:

*The valley,
The river falling down over rocks,
The hilltop where the blueberries grew.*

1. Were you able to create the part of the poem in exact style?
2. List down the styles you could not create.

Notepad is a basic word processing software. It includes limited features and tools in editing the text. There are several other advanced word processors that enable user to create, modify, edit, print, change colour and text size and save documents.

Creating a document includes typing text and saving it. While editing a document involves correcting spelling mistakes, deleting or moving words

or sentences. Modifying a document involves changing alignment, colour, size and styles of texts.

Word processing software provides tools to create, edit and format documents. It allows you to:

- » make changes to the document in parts or as a whole;
- » change font, size, colour and styles of the text;
- » check spelling and grammar;
- » count the number of words in a document;
- » change the size of the page margin;
- » insert page number, page border, header and footer;
- » link text or diagram to a website or other files;
- » arrange text into columns, tables and shapes;
- » add graphics such as photographs, clipart, illustrations, etc.;
- » print a part or whole of the document.

Some popular Word Processors are:

1. Microsoft Word
2. LibreOffice Writer
3. Pages
4. Google Docs



Microsoft Word



LibreOffice Writer



Pages



Google Docs

2.2 Introduction to MS Word

Microsoft Word is a word processing software developed by Microsoft in 1983. It is a part of Microsoft Office software package. Microsoft Word is also popularly called **Word** or **MS Word**. It is available for both Windows and Macintosh operating systems.

2.3 Features of MS Word Window

Follow the steps given below to open MS Word.

Start > All programs > MS Office > MS Office Word 2007

MS Word window appears on the screen as shown in **Figure 2.1**.

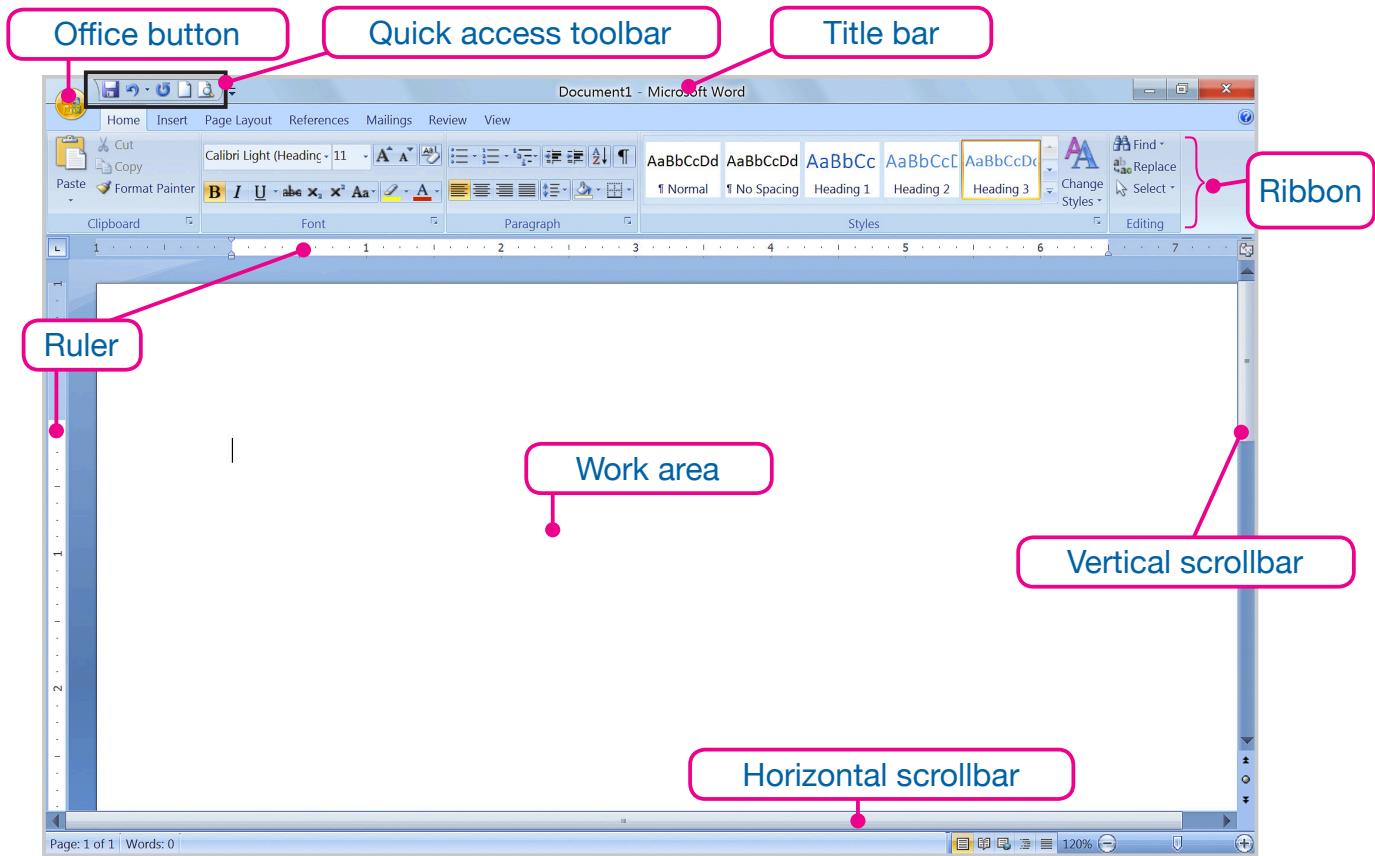


Figure 2.1 MS Office 2007 window

The common features of the MS Word window include the following:

1. **Office Button** gives the menu to create a new file, open an existing file, save a file, or perform many other document options.
2. **Quick Access Toolbar** provides access to commands you use frequently. Save, Undo, and Redo commands are already present. However, other commands can also be shown.
3. **Title Bar** displays the name of the document on which you are currently working. MS Word automatically assigns a name to the new document as **Document1**. The subsequent new documents created hereafter are assigned as **Document2**, **Document3**, and so on.
4. **Ribbon** has several Tabs at the top. Clicking a tab displays several related command Groups. There is Dialog Box Launcher in the bottom-right corner of some groups to access additional commands as shown in **Figure 2.2**.

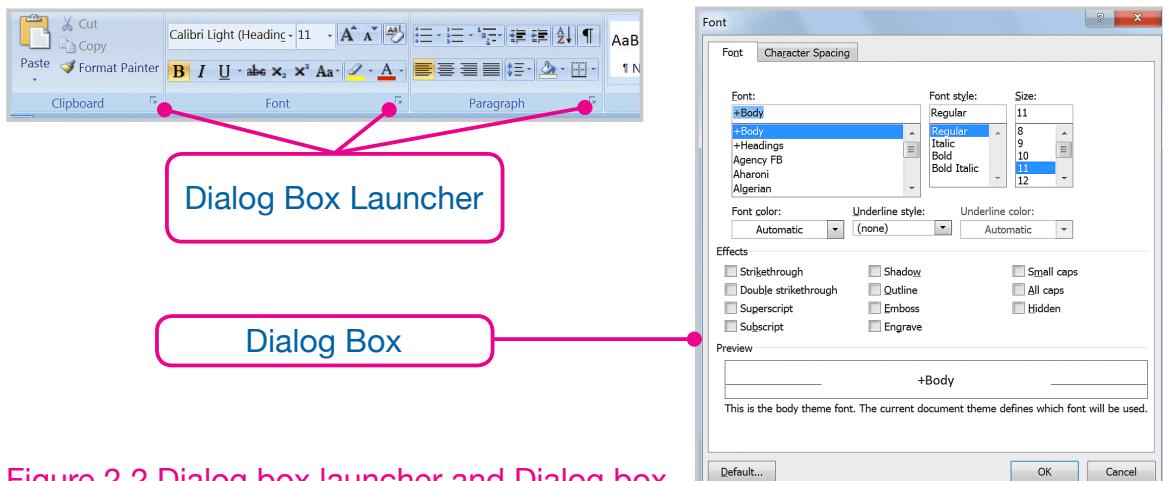


Figure 2.2 Dialog box launcher and Dialog box.

5. **Ruler** is shown below the ribbon and on the left side of the window. It shows the measurements of the document.
6. **Work Area** is the space to type text, insert images and tables. You will see a blinking vertical line called Cursor on work area. Cursor indicates the position where the text can be typed.

7. **Vertical and Horizontal scrollbars** are located at bottom and right side of the window. It consists of slider and arrow buttons to scroll the page up, down, or across the window.
8. **Status Bar** is located at the bottom of the window. It provides information such as the current page, number of words, quick access tools for different document views and page magnification.

2.4 Basic Commands in MS Word 2007

Follow the steps given in the table given below to carry out some common tasks.

Sl. No	Task	Steps
1	Creating a New Document	Office Button >> New >> select Blank document >> click Create button Keyboard shortcut: Ctrl + N
2	Saving a document	Office button >> Save >> give a filename in Save As dialog box >> Save button Keyboard shortcut: Ctrl + S
3	Opening an existing document	Office Button >> Open >> select the file >> click Open button Keyboard shortcut: Ctrl + O
4	Closing a document	Office Button >> Close Keyboard shortcut: Ctrl + W
5	Exiting Word	Office Button >> Exit Word

Try This On Machine

Type the poem "Jimmy Jet and His TV Set" by Shel Silverstein (English Textbook - Page 105) in MS Word and save it. We will use this document later.

2.5 Formatting in MS Word

The text in a document can be made attractive and reader friendly by modifying the colors, style and size of the text. This modification of the appearance of text is known as **formatting**. Well formatted text can draw attention of the reader and helps to pass on messages clearly.

Text must be selected before formatting. We can select a part of text or the whole text according to our need. If a text is selected, it will be highlighted in blue colour as in **Figure 2.3**.

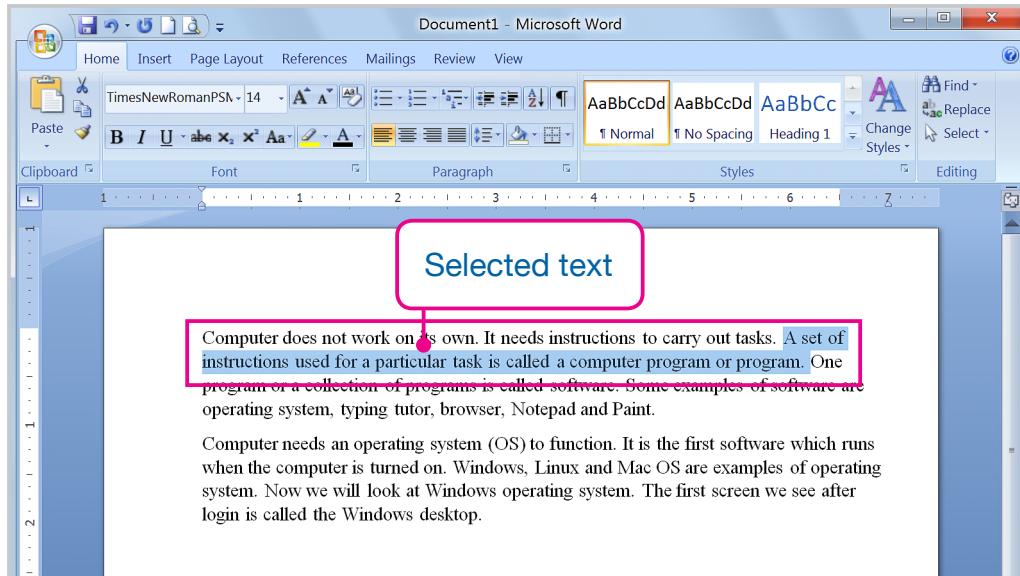


Figure 2.3 Selecting text

Texts can be selected in two ways:

- » Click and drag the mouse over the text.

- » Place the cursor at the desired location, hold down the Shift key and Arrow keys on the keyboard to select the text.

A. Character Formatting

Character formatting means modifying the appearance of words or sentences. Underlining words, changing text size and styles, applying colours and highlighting words are a few examples of character formatting. In MS Word, we use features available in Font group to modify the appearance of text. There are several features in Font group as shown in **Figure 2.4**.

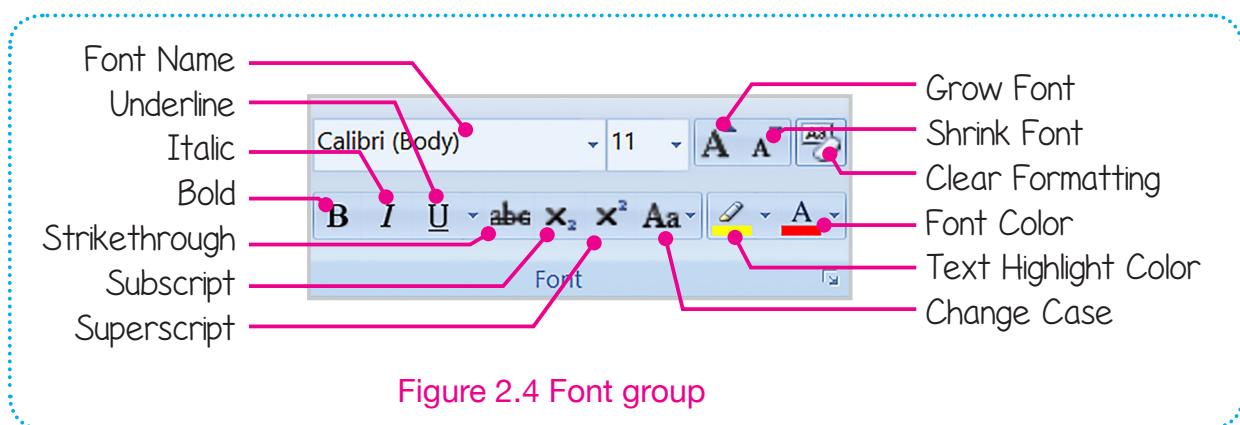


Figure 2.4 Font group

Tools	Function	Keyboard Shortcut
Font Name	Changes the font face	Ctrl + Shift + F
Bold	Make the selected text bold	Ctrl + B
Underline	<u>Underline the selected text</u>	Ctrl + U
Italic	<i>Italicize the selected text.</i>	Ctrl + I
Strikethrough	Draw a line through the middle of the selected text.	
Subscript	Create small letters below the text baseline (H_2O).	Ctrl + =

Tools	Function	Keyboard Shortcut
Superscript	Create small letters above the line of text ($2^2 = 4$).	Ctrl + Shift + +
Change Case	Change all the selected text to UPPER CASE, lowercase, Sentence case, tOGGLE cASE, Capitalize Each Word.	Shift + F3
Enlarge Font	Make your text a bit bigger.	Ctrl + >
Shrink Font	Make your text a bit smaller.	Ctrl + <
Clear Formatting	Remove all the formatting from the selection leaving only the normal, unformatted text.	
Font Color	Change the text colour.	
Text Highlight Color	Make text look like it was marked with a highlighter pen.	

The additional character formatting options can be accessed by clicking on Dialog box Launcher as shown in **Figure 2.5**.

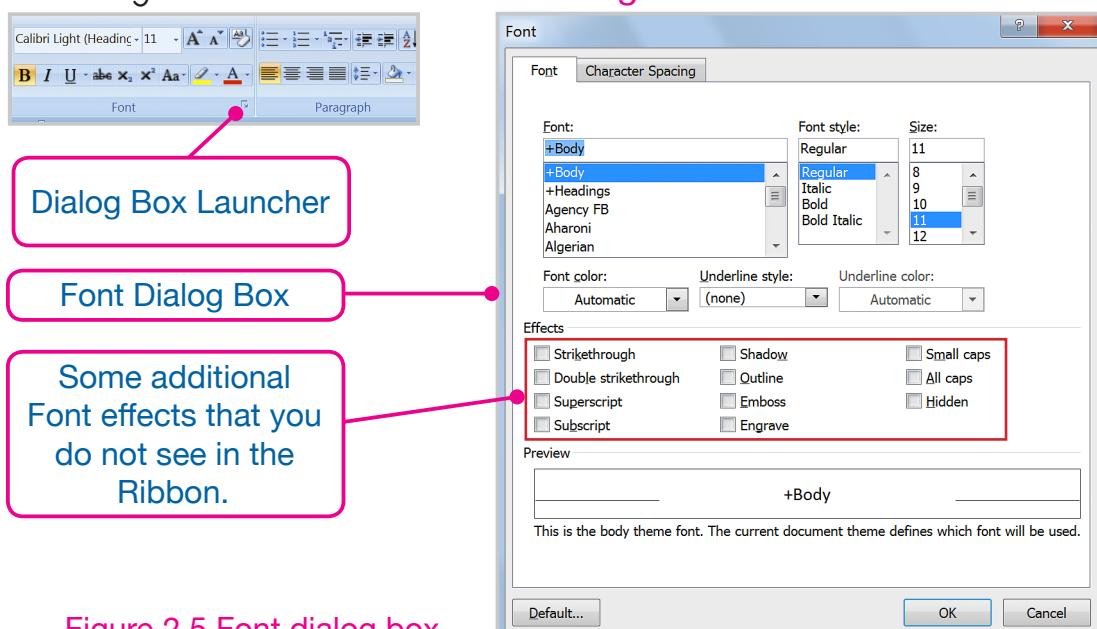


Figure 2.5 Font dialog box

Try This On Machine

Open the poem "All the Places to Love" that you have saved earlier in MS Word. Apply following formats:

1. Make the title of the poem.
 - Upper case
 - Bold
 - Font Size 14
 - Font Face to Comic Sans MS
 - Font colour of your choice
 - Double underline the title.
2. Highlight author name and make it Bold and Italic.
3. Change the body of the poem to:
 - Italic
 - Font colour of your choice

B. Paragraph Formatting

Paragraph formatting is the changing of the appearance of the whole paragraph using the features available in Paragraph group. Applying bullets and numbers, arranging paragraphs in order, aligning paragraphs to left, centre and right, and adjusting the space between the lines and paragraphs are a few examples of paragraph formatting. There are several features in Paragraph group as shown in **Figure 2.6**.

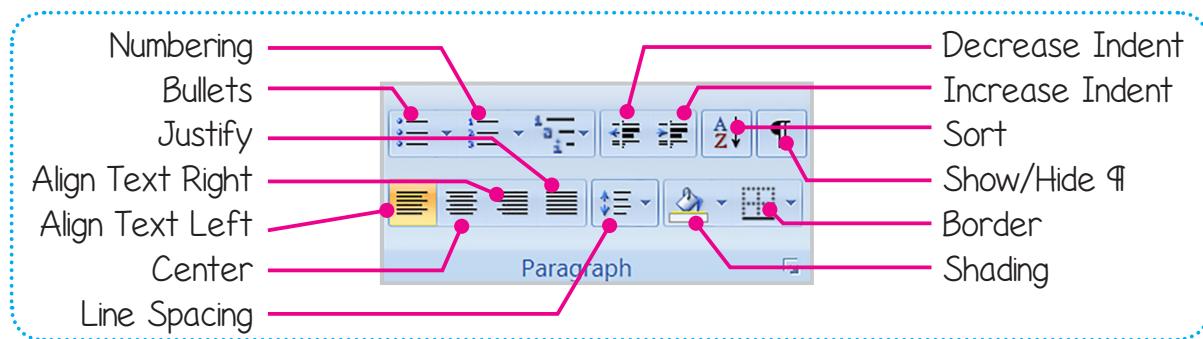
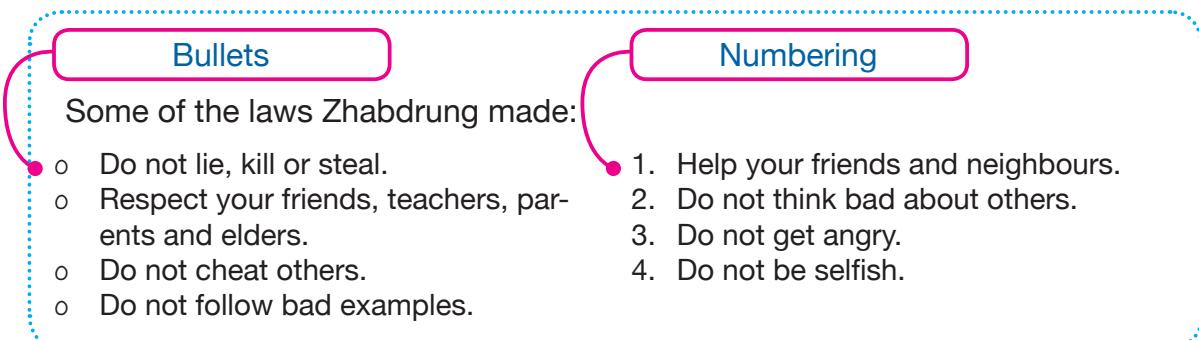


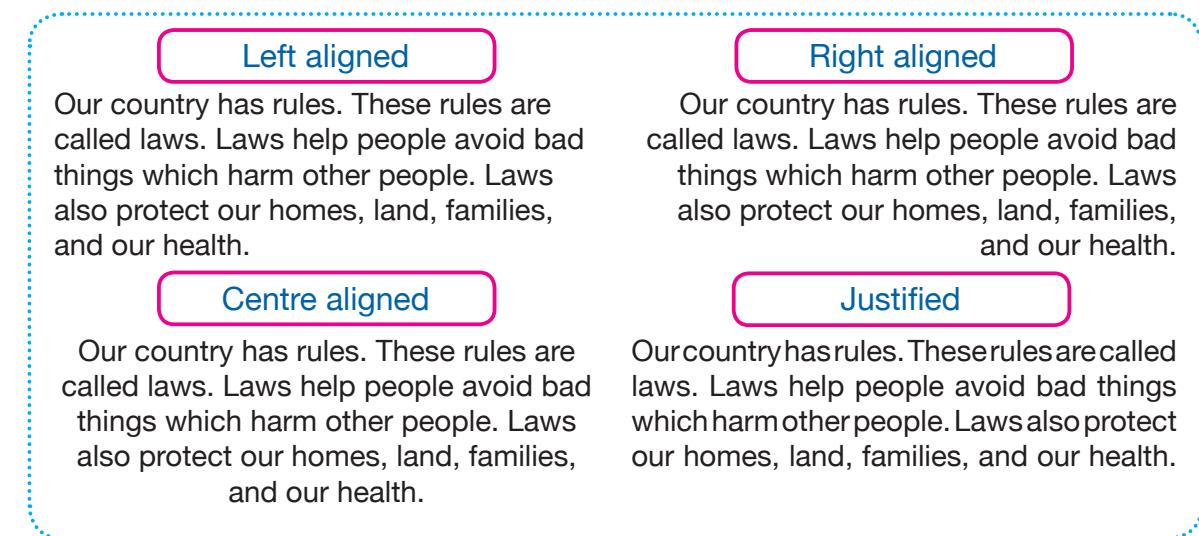
Figure 2.6 Paragraph group

Some of the paragraph formatting tools are used are:

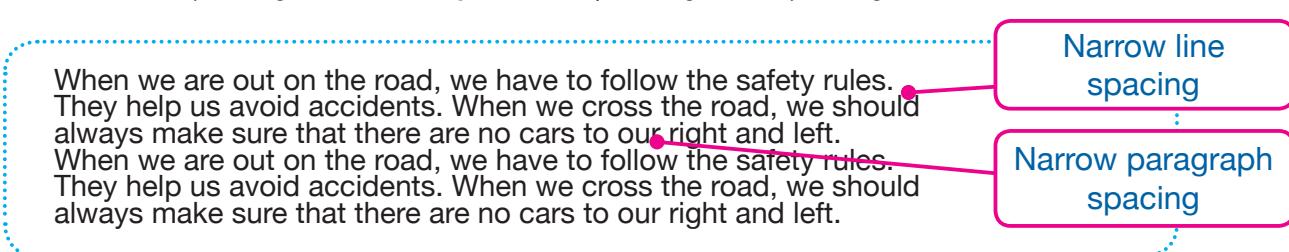
1. **Bullets and Numbering:** We use Bullets tool to assign a symbol to list of items. Similarly a Numbering tool is used to assign numbers and letters to a list of items as shown below:

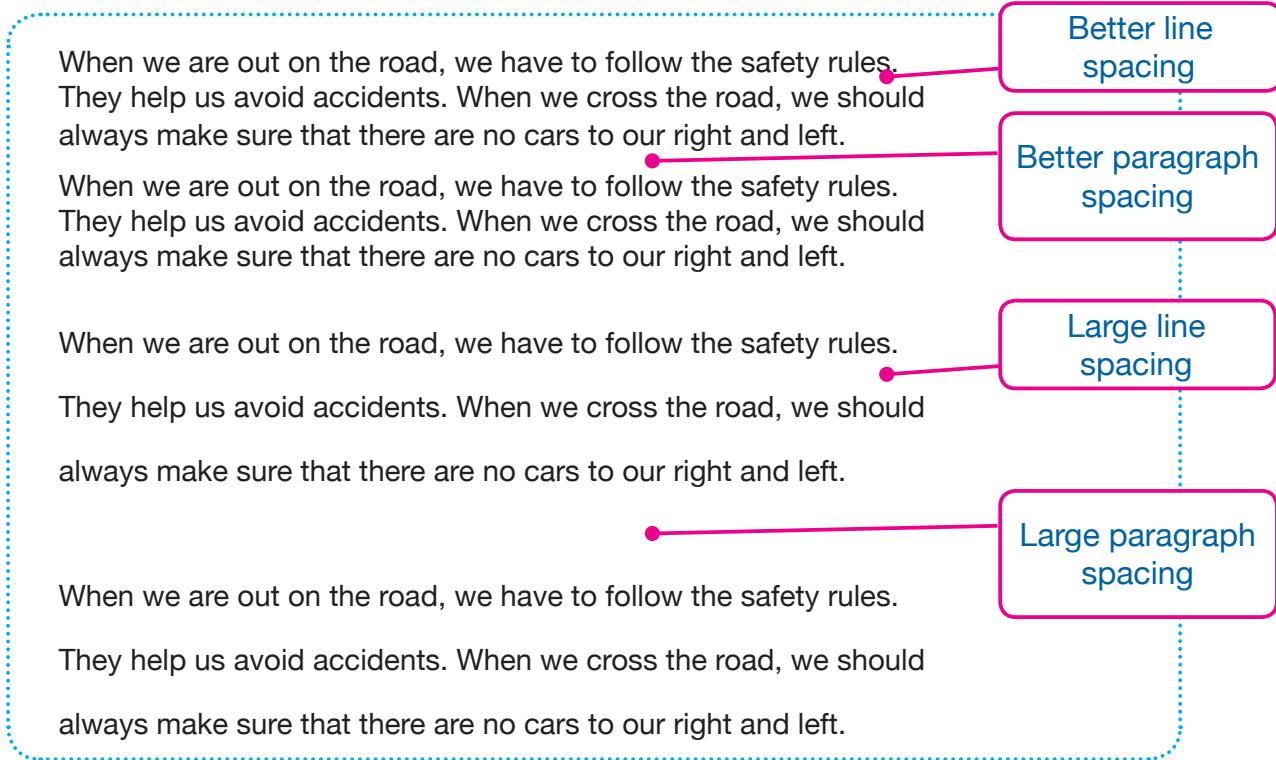


2. **Alignment:** Left, Right, Centre and Justify alignment tools are used to align the paragraphs in the desired position. The appearance of the paragraph after application of alignment tools is shown below.



3. **Line Spacing:** Appropriate line and paragraph spacing are necessary to make the text in a paragraph easy to read and understand. These spacing can be adjusted by using line spacing tool.





4. **Indentation:** It is the distance of the paragraph from the left and right margin of a document. Distance can be changed by Increase indent and Decrease indent tools as shown in **Figure 2.7**.

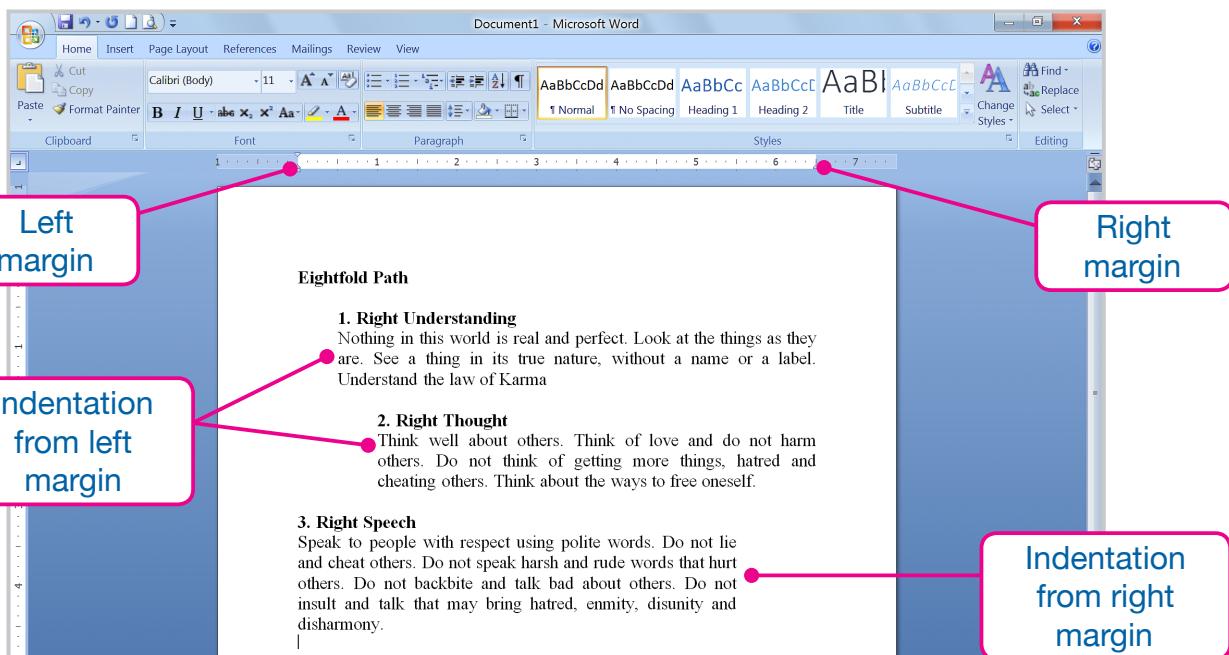


Figure 2.7 Indentations

Try This On Machine

Create a document with texts and paragraphs exactly as shown below.
Set line spacing to 1.5

Computer

Hardware

1. Keyboard
2. Mouse

Software

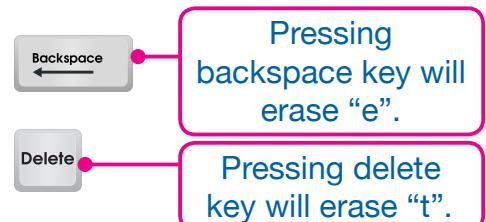
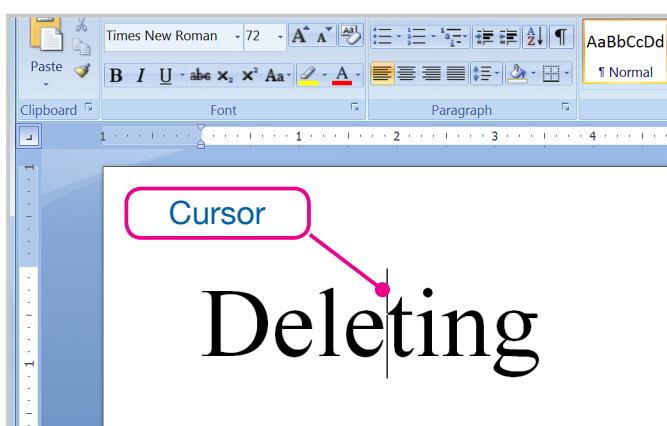
- Operating System
- MS Word

2.6 Editing Texts

Word provides the facility to make changes to our document. Making changes in the document is called **editing**.

A. Delete

BACKSPACE and DELETE keys on the keyboard are used to erase text. Backspace key will erase a single character of text to the left of the cursor while Delete key will erase a character to the right.



A word, sentence or paragraph can be selected and deleted by pressing Delete key or Backspace key.

B. Copy, Cut and Paste

Copy tool is used to copy the selected text or paragraphs without changing the original text. The copied texts or paragraphs are saved in the computer's memory and can be placed by using Paste tool in a desired location in the same or different document.

- ☞ Select the text > click on COPY button > Place the cursor in new location > click on PASTE button**

Texts and paragraphs can be moved from one location to another in the same or different document using the Cut and Paste tool. Cut tool removes the selected texts and paragraphs and saves in the computer's memory. Paste tool inserts the texts and paragraphs from the computer's memory at the desired location.

- ☞ Select the text > click on CUT button > Place the cursor in new location > click on PASTE button**

C. Spelling and Grammar

MS Word checks spellings and grammar automatically as you type. It uses red underlines to indicate possible spelling mistakes and green underline to indicate possible grammatical mistakes. Launch Spelling and Grammar dialog box from the Review tab to correct spelling and grammatical mistakes. This dialog box provides several options in correcting the mistakes as shown in **Figure 2.8 (A and B)**.

Family is very important part of our everyday life. Family helps us in shaing our life. Living in the family teaches us the value of unity, love, affection, care, truthfulness and self-confidence.

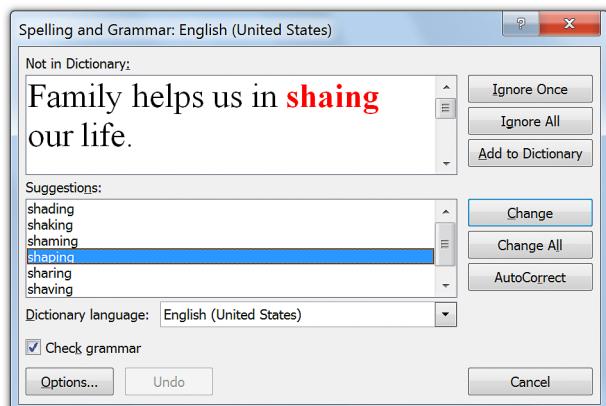


Figure 2.8(A) Spelling and Grammar

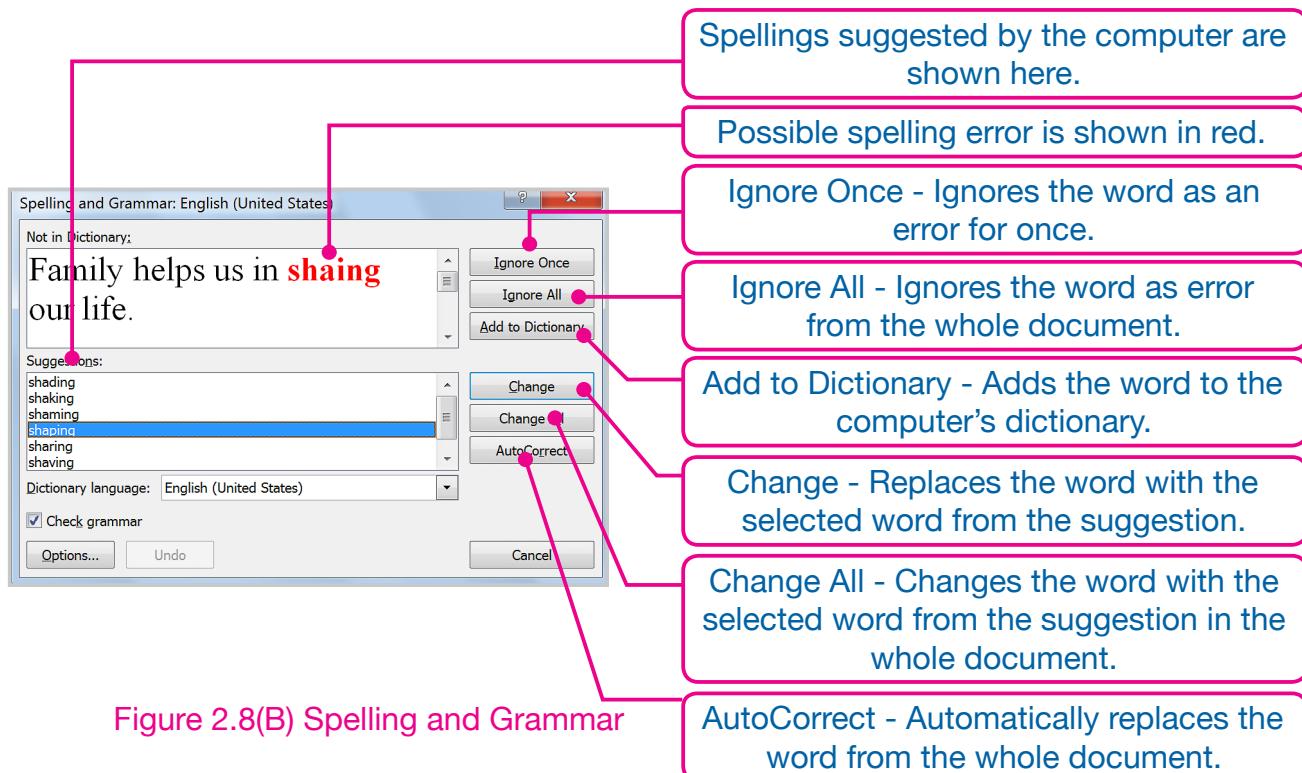


Figure 2.8(B) Spelling and Grammar

D. Find and Replace

We can easily search and locate a particular word, phrase or a sentence by using Find tool. We use Replace tool to both locate and replace a particular word, phrase or a sentence.

Home tab > Find > Type the word that you want to find in Find what > Type the word you want to replace in Replace with > Replace/Replace All

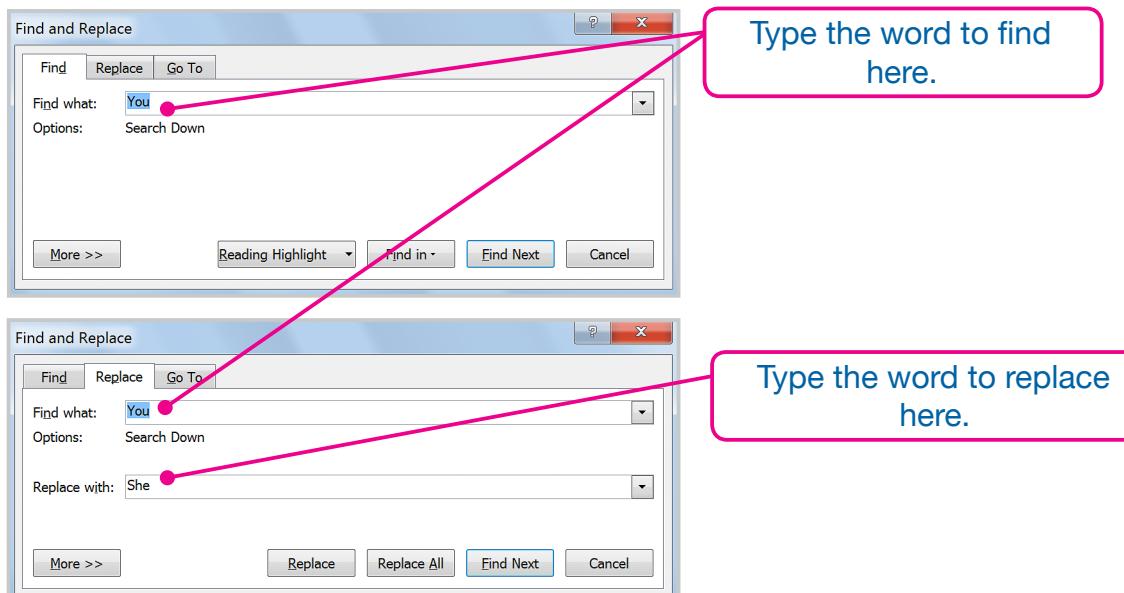


Figure 2.9 Find and Replace dialog box

E. Undo and Redo

We can reverse the actions performed while formatting and editing texts and paragraphs in a document by using Undo tool. For example, if a text or a paragraph is deleted, the Undo tool can recover the deleted text and paragraph. Redo tool is used to reverse the actions carried out by Undo tool.



Undo



Redo

Try This On Machine

Sonam learned about triangles in Mathematics class. He has classified triangles into two groups based on the measurement of angles and sides. Identify mistakes and correctly group the triangles using copy, cut and paste tool. Correct the spelling mistakes and use replace tool to change the word "triangle" with "Dru-sum".

Help him to complete the task and save it as Triangles.

Triangles based on Side:

1. Scalene triangle
2. Isosceles triangle
3. Right triangle

Triangles based on Angle:

1. Acute triangle
2. Obtuse triangle
3. Equilateral triangle

2.7 Typing in Dzongkha

Dzongkha is our national language. We learn Dzongkha in school and know how to read, write and speak. We can also type in Dzongkha in computer. It is important to learn how to type in Dzongkha so that we promote our national language using technology.

However, we must ensure that Dzongkha keyboard software and fonts are added in your computer. Follow the steps below to check if Dzongkha keyboard software and fonts are added:

- 1 Check for Language bar in the System tray and click on Language bar and see if Dzongkha is listed as shown in **Figure 2.10**. If the Language bar or Dzongkha is not available, then Dzongkha keyboard software has not been added to your computer.

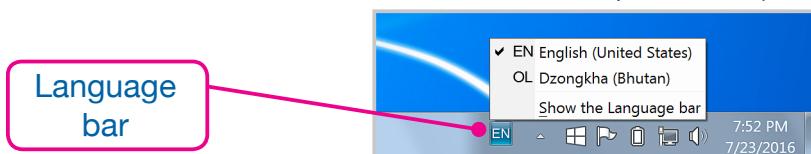


Figure 2.10 Selecting Dzongkha Keyboard

- 2 If the Dzongkha language is listed, check if Dzongkha fonts such as **DDC Uchen**, **Wangdi 29**, **Tsuig_04** or **XTashi** are available in MS Word under Font group as shown in **Figure 2.11**.

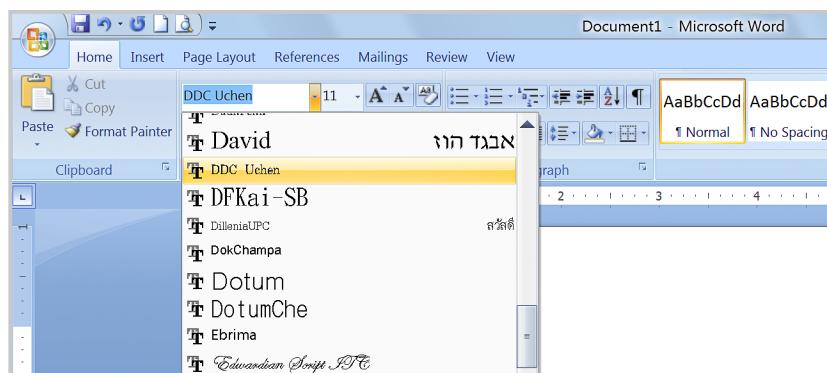


Figure 2.11 Dzongkha Font

In MS Word you can type and edit and format Dzongkha text in similar manner as English texts and paragraphs.

Follow the steps given below to type in Dzongkha:

- 1 Open a new document and choose any Dzongkha font. For example, DDC Uchen as shown in **Figure 2.12**.

- ② Select Dzongkha from Language bar as shown in **Figure 2.12**. The Language bar icon will change to **OL** from **EN**.

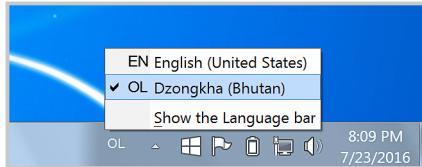


Figure 2.12 Dzongkha keyboard selected

- ③ Keyboard layout for Dzongkha is different from English. Follow the Dzongkha keyboard layout given in **Figure 2.13** to start typing.

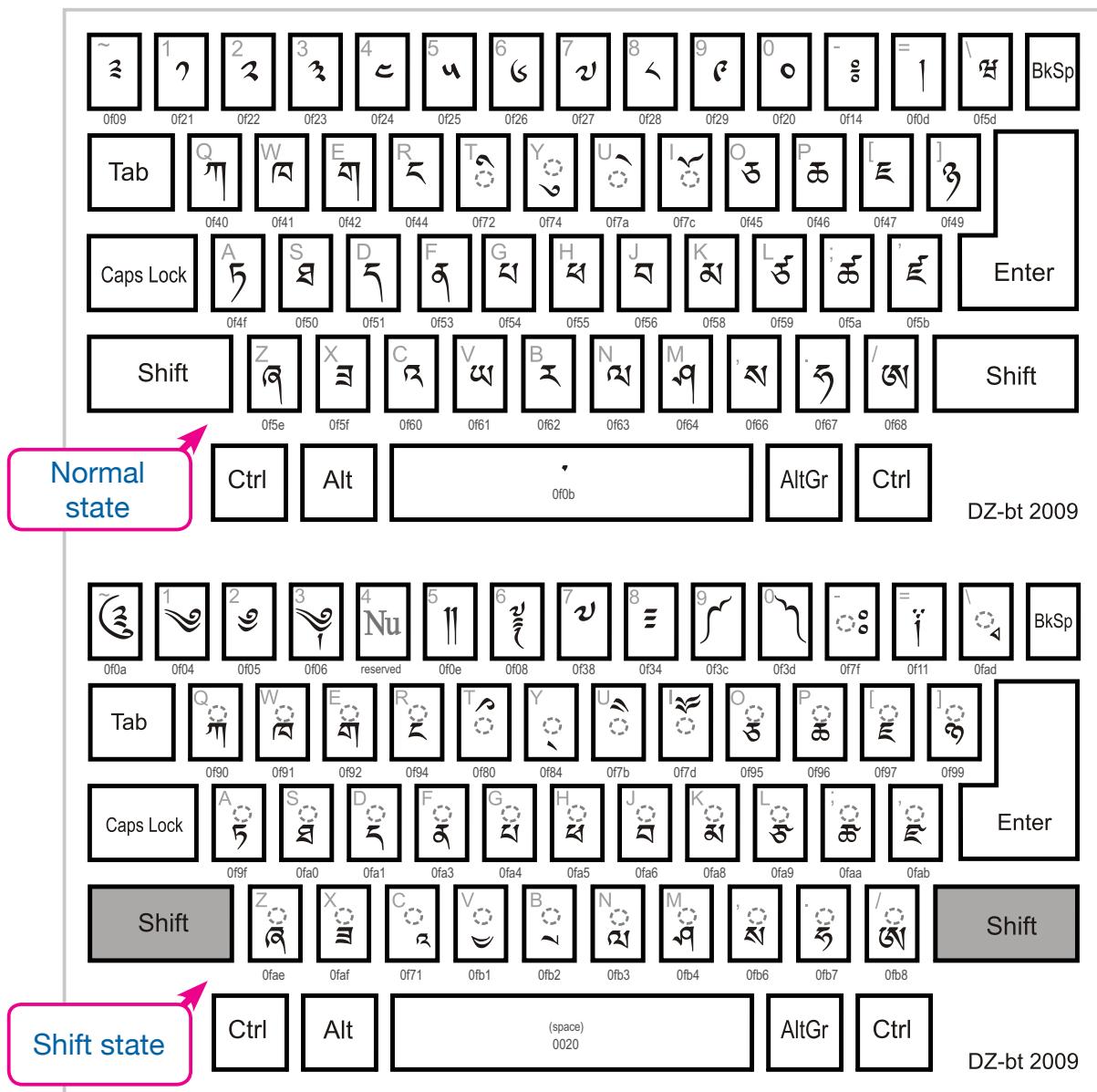


Figure 2.13 Dzongkha keyboard Normal and Shift state

Try This On Machine

Type the Dzongkha alphabets and Dhog-chen (ଡ୍ରଙ୍କଷ୍ଣା), which includes the seven Ya-tag (ୟାତ୍ମକା), fourteen Ra-tag (ରାତ୍ମକା) and six La-tag (ଲାତ୍ମକା) as shown below and save the document as "Dzongkha".

ଶଶିପ୍ରେତ୍ତାନ୍ତିଷ୍ଠିତ

ପ୍ରଶାସନ

ଯାହାରୁ କୁ କୁ କୁ କୁ କୁ

ମୁଖ୍ୟମନ୍ୟା ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ ଏ

ପାତ୍ରଶବ୍ଦି ପାତ୍ରଶବ୍ଦି ପାତ୍ରଶବ୍ଦି ପାତ୍ରଶବ୍ଦି ପାତ୍ରଶବ୍ଦି

Now You Know

1. Word processor is a software that allows users to create, edit, print, and save documents.
 2. Texts and paragraphs must be selected before applying any formatting to it.
 3. Formatting tools under the Font group will modify the appearance of the selected text.
 4. Undo, Redo, Copy and Paste, Cut and Paste, Spelling & Grammar, and Find and Replace are useful tools for editing a document.

5. MS Word can be used for typing in Dzongkha.
6. Paragraphs in MS Word can be modified by changing the alignments, line spacing and indents, and by adding bullets and numbering.

Check Your Progress

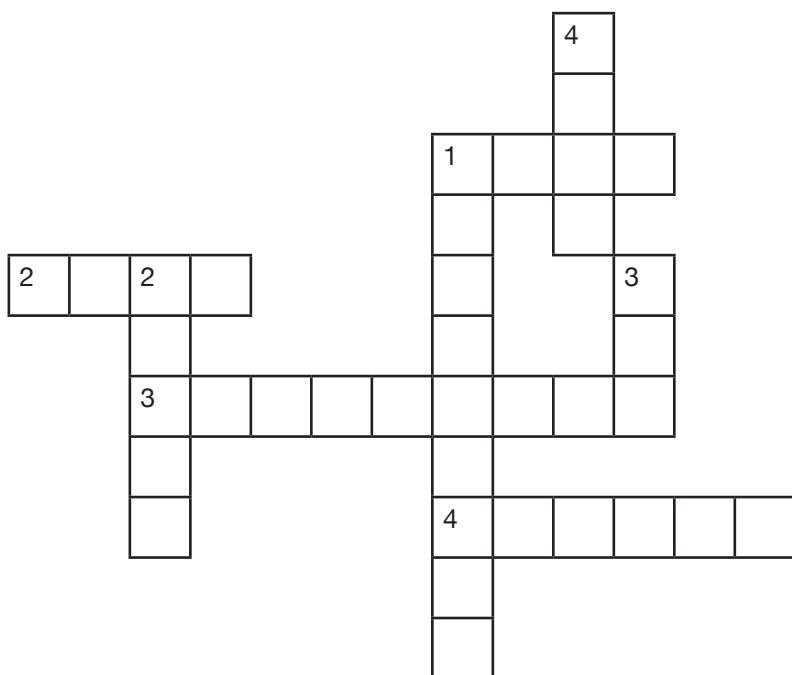
1. Complete the crossword puzzle

ACROSS

- (1) Reverse the last action performed.
- (2) Create a duplicate of the selected text.
- (3) Create small letters below the text baseline.
- (4) Slanting text.

DOWN

- (1) Show line below the selected text.
- (2) Put copied text at the position where the cursor is placed.
- (3) Erase the selected text from its original position.
- (4) Repeat the last action performed.



2. Complete your details as shown below in Dzongkha and save it as "My Details".

୧ୟିନ୍ଦ୍ରିୟ
ଶ୍ରୀ ପତ୍ରା
ଶ୍ରୀ କୌଣସି/ମୁଖ୍ୟ
ପତ୍ରା ପତ୍ରା

3. His Majesty the King's birthday is celebrated from 21st to 23rd February. Write a short report of what you did during the celebration using MS Word. Your report should include:
- Report title:** Make it bold and align it to centre.
 - Date of the event:** Position it at the top right of the page. Make it italic.
 - Report content:** Apply Justify Text alignment and line spacing of 1.5. Insert bullets or numbers wherever required. Use the font "Cambria".
 - Your name and Class:** Position it at the bottom right of the page and underline it.

Explore Further

1. Format the given poem "the little red hen" as per the instructions that follows:

the little red hen

The little Red Hen was in the farmyard with her chickens, when she found a grain of wheat. "Who will plant this wheat?" she said. "Not I," said the Goose.

“Not I,” said the Duck.

“I will, then,” said the little Red Hen, and she planted the grain of wheat.

When the bread was baked, she said, “Who will eat this bread?”

“I will,” said the Goose

“I will,” said the Duck

“No, you won’t,” said the little Red Hen. “I shall eat it myself. Cluck! cluck!” And she called her chickens to help her.

When the wheat was ripe she said, “Who will take this whaet to the mill?”

“Not I,” said the Goose.

“Not I,” said the Duck.

“I will, then,” said the little Red Hen, and she took the whaet to the mill.

When she brought the flour home she said, “Who will make some bread with this flour?”

“Not I,” said the Goose.

“Not I,” said the Duck.

“I will, then,” said the little Red Hen.

- (a) Make title bold and center align, apply Shadow effect.
- (b) Change the whole text to Verdana and font size to 13.
- (c) Move the second paragraph to the end.
- (d) Set the line spacing to 1.7.
- (e) Correct the spelling mistakes and grammatical errors.
- (f) Highlight the words “I will”.
- (g) Replace the word “Red” with “White”.

- (h) Apply different colour for each paragraph.
 - (i) Count the number of words and lines using Word Count tool
(Hint: Review tab).
 - (j) Type the moral of the story at the end as "You reap what you sow (type in Dzongkha)".
 - (k) Save the document as "The White Hen".
2. Practice Dzongkha typing using the Dzongkha typing tutor.
 - (a) Type the moral of the story at the end as "You reap what you sow".
 - (b) Save the document as "The White Hen".
 3. Practice Dzongkha typing using the Dzongkha typing tutor.

Weblinks

1. Introduction to MS Word 2007

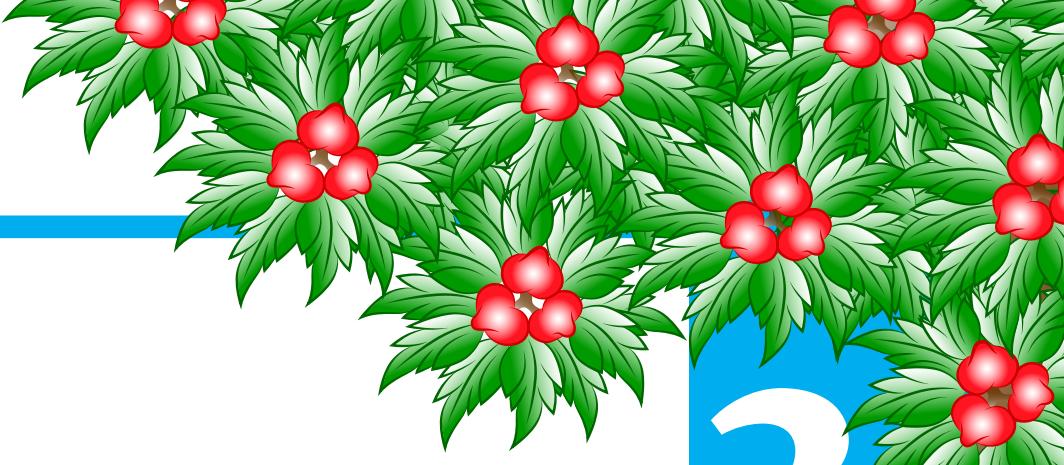
📎 <http://www.gcflearnfree.org/word2007>

2. Microsoft Word 2007 Tutorial

📎 <http://www.baycongroup.com/wlesson0.htm>

3. Dzongkha Keyboard practice

📎 <http://gate2home.com/Dzongkha-Keyboard>



3

FILE AND FOLDER MANAGEMENT

In this Chapter

- 3.1 Creating Folders
- 3.2 Managing Files and Folders
- 3.3 User Account and Password

Learning Objectives

1. Create a folder.
2. Rename files and folders.
3. Move or delete files and folders.
4. Explain the importance of user account and password.
5. Create a secure password.

3.1 Creating Folder

We have learned that a file is a collection of data or information. As we go on using the computer, we will be creating many files and of different types. It will be difficult and confusing to find and access the right file later on. Therefore, it is important to organize files. This process of organizing files is known as managing files. We can manage files by keeping them in a container called **Folder**, just like in offices where paper files are put in file folders of specific subject. The computer provides several types of folders where file can be stored such as **Documents**, **Pictures**, **Music** and **Games**. We can also create folders at different locations in the computer and name them as per type of documents that will be stored in them. In Windows OS, a filename or folder name can contain up to 256 characters, including the space. It cannot contain these characters / \ : * ? " < > |.

To create a folder, follow any one of the following steps:

- ☞ Right-click on the blank area of the desired location >> select New > Folder > Give a name to the folder > press Enter.
- ☞ Go to the desired location > press Ctrl + Shift + N > Give a name to the folder > press Enter.

A Folder can also store other folders. A folder within a folder is called a **subfolder**.

3.2 Managing Files and Folders

The simple way to manage files and folders effectively are to store related files and subfolders together in a folder. It is a good practice to name a folder according to the types of files and subfolders stored in it. Managing files and folders involve selecting, renaming, deleting, moving and copying files and folders.

We need to select Files and Folders before selecting, renaming, selecting, moving and moving them.

A. Selecting Files and Folders

We need to select a file or folder before renaming, deleting, moving or copying it. Selected files and folders appear highlighted on the screen. Some of the ways to select files or folders are listed below:

- » To select a file or folder, click on it.
- » To select all files or folders in a sequence, click on the first file or folder, and then on the last one while keeping the Shift key pressed.
- » To select random files or folders, select the first file or folder and continue to select the desired files or folders while keeping the Ctrl key pressed.

B. Renaming Files and Folders

Renaming a file or folder means changing the name of a file or folder. A file or folder can be renamed in following ways:

- ☞ Right-click the file or folder that you want to rename > click Rename > Type the new name > press Enter.
- ☞ Click on the name of the file or folder to select it > Click on it again > Type the new name > press Enter.

C. Copying Files and Folders

Copying a file or folder makes another copy, without removing it from its original location. A file or folder can be copied to a new location in following ways:

- ☞ Right-click the file or folder that you want to copy > click Copy > Go to the desired location and right-click > click Paste.

- ✎ Select the file or folder > Press Ctrl key and drag and drop to a new location.

D. Moving Files and Folders

Moving a file or folder is similar to copying a file or folder except that original file or folder will be removed from the original location. A file or folder can be moved to a new location in following ways:

- ✎ Right-click the file or folder that you want to move > click Cut. Your file or folder will disappear > Go to the desired location and right-click > click Paste.
- ✎ Select the file or folder > drag and drop to a new location.

E. Deleting Files and Folders

Deleting a file or folder mean removing unwanted file or folder from the computer. A file or folder can be deleted in following ways:

- ✎ Right-click the file or folder that you want to remove > click Delete. A Delete File or Delete Folder dialog box will appear to confirm the action > Click Yes button.
- ✎ Select the file or folder to remove > press Delete key on the keyboard. A Delete File or Delete Folder dialog box will appear to confirm the action > Click Yes button.

Try This On Machine

1. Create a folder on the desktop and name it as "Task".
2. Copy and paste all your MS Word files into Task folder.
3. Delete your original MS Word files from My Documents folder.
4. Create another folder within this Word folder and name it as "Sample".
5. Rename the folder "Task" to "MS Word".
6. Move "MS Word" folder to "My Documents" folder.

Do You Know?

All deleted files and folders are not removed permanently from the computer, but are moved into a special folder called Recycle Bin. Deleted files and folders can be either restored to earlier location or removed permanently from the computer.



3.3 User Account and Password

Files and folders you have created on the computer can be accessed by anyone who uses the computer. If important files are stored on a computer, it is necessary to protect and prevent other people from viewing, modifying, copying and deleting them by limiting access to your computer. This can be done by creating your own user account and unique password.

A computer can have many users. A user must have an account to use a computer. A user account contains information which tells the computer which files and folders can be accessed and what changes can be made by a user. Any changes, such as a desktop background or screen saver or files and folders created within that account can be seen only by the person who uses that account.

User account can be with or without a password. It is a good practice to have a password to keep computer safe. Password protected computer ensures only the person with the password can use the computer. Therefore, it is not wise to share passwords with everyone. A password is a combination of characters. It can be a word or a phrase consisting of letters (**a,b,c...**), numbers (**1,2,3,...**), and blank spaces and other special characters (**#,@,\$,...**).

Let us create your own user account and password.

- 1 Click on Start button. Select Control Panel.

- ② Ensure that the Control Panel is in Category view.
- ③ Under User Accounts and Family Safety, click on Add or remove user accounts.
- ① Click on Create a new account.
- ② Write the name for your account and click on Create Account button.
- ③ In the Manage Accounts window, select your account. Click on Create a password.
- ④ Enter the password in the first text box and type the same password in the second text box to confirm your password. In the last text box, you can type the hint for your password is optional. This means you can type the hint or choose to leave it blank.
- ⑤ Click on Create password button. Your user account is now password protected.
- ⑥ Log off from the current user account.
- ⑦ Log in to your computer using the account name and password you have created.



Caution

Anyone trying to use the computer will be able to see the password hint on the login screen. So, set your password hint carefully.

Try This On Machine

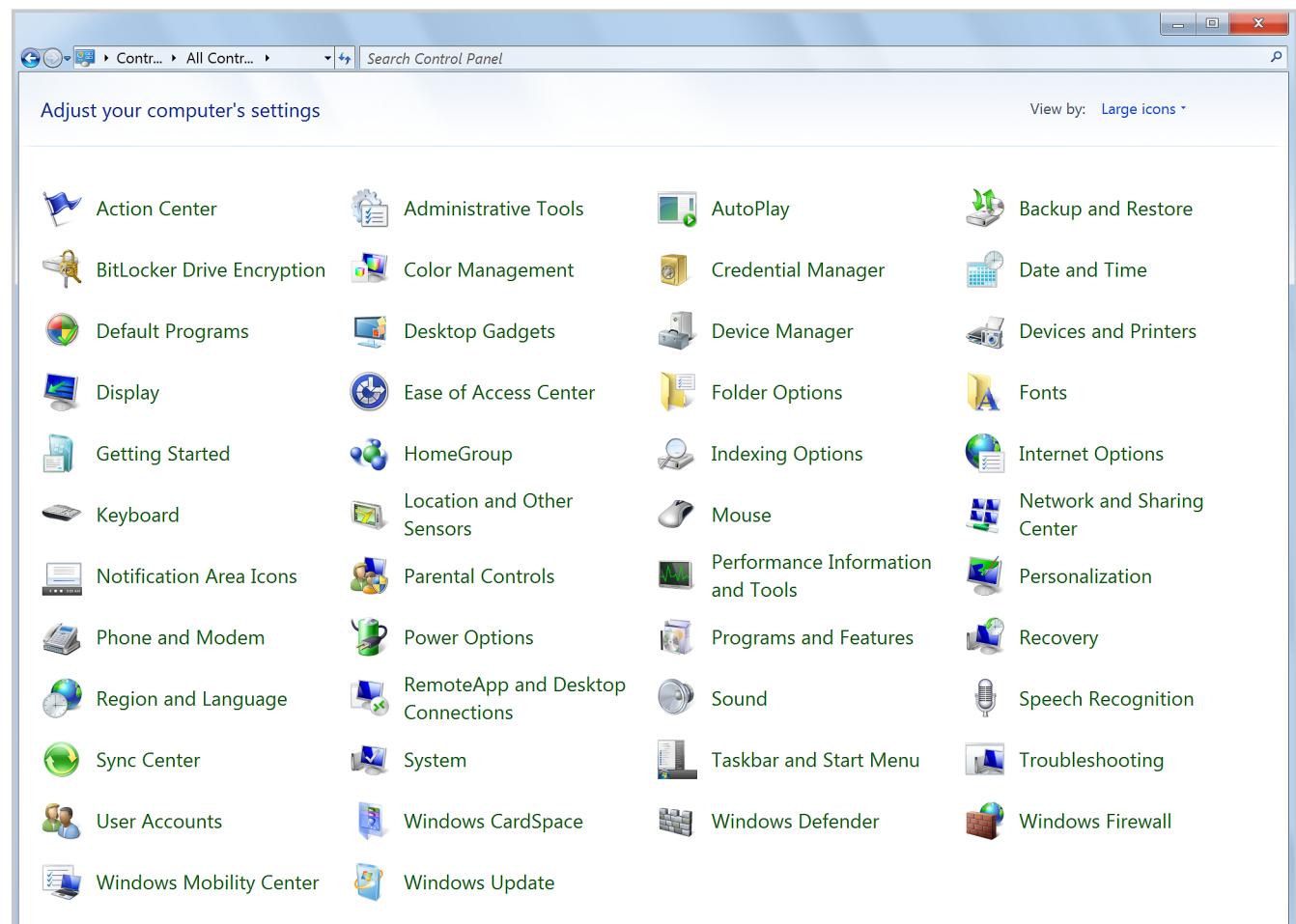
Create a user account for your friend.

A simple password like **your name, family name, date of birth, number sequence like 1234, and phone numbers** can be easily guessed and used by others to access your computer account without your permission. Therefore, creating strong password that is unique and complex is important.

Control Panel - Category view



Control Panel - Large icon view



Here are some tips on how to create strong passwords.

- » Passwords should be at least 8 characters in length. Longer the password, stronger it becomes. For example, **mashedpotatoes** is stronger than **mpotatoes**.
- » Add unexpected characters and removing some letters. For example, **mashed!potatoes**.
- » Combine upper case and lower case letters, numbers and special characters. For example, **m@\$hedP0t@t0e\$**.

Password is like a key to your house. It is important to know how to keep your password safe. Some of the ways to keep your password safe are by :

- » Not sharing your password with others.
- » Ensuring your password is not seen by others when you are using it.
- » Memorizing your password than writing it down.
- » Changing your password time to time.

Now You Know

1. Managing files and folders involves selecting, renaming, deleting, moving and copying files and folders.
2. Storing related files and folders together in a folder, and naming the folder appropriately is a good way of organizing files and folders.
3. Passwords protect computer from being used without permission.
4. Strong password provides better protection.

Check Your Progress

1. Fill in the blanks with appropriate words.
 - (a) Number of characters in a filename can be less than or equal to
 - (b) You can select random files or folders by holding key and clicking on them.
 - (c) Deleted files and folders will be stored in the
 - (d) Folder moved inside another folder becomes a
2. Answer the following questions.
 - (a) Describe how to manage files and folders in the computer.
 - (b) What are the risks of having a weak password for your computer?
 - (c) Dema has bought a new computer and she is about to set a password. Advise her how to set a strong password.

Explore Further

1. Delete a file or folder. Explore and write two ways to recover the deleted file or folder.
2. Find out where and how passwords are used.
3. Change your user account password.

Weblinks

1. Managing files and folders

📎 <http://www.quepublishing.com/articles/article.aspx?p=1393064>

2. Working with files and folders

- 📎 <http://aeromaniacs.com/public/manuals/windows7/Lesson4-FileManagement.pdf>
- 📎 <http://windows.microsoft.com/en-us/windows/working-with-files-folders#1TC=windows-7>

3. Creating a user password in Windows 7

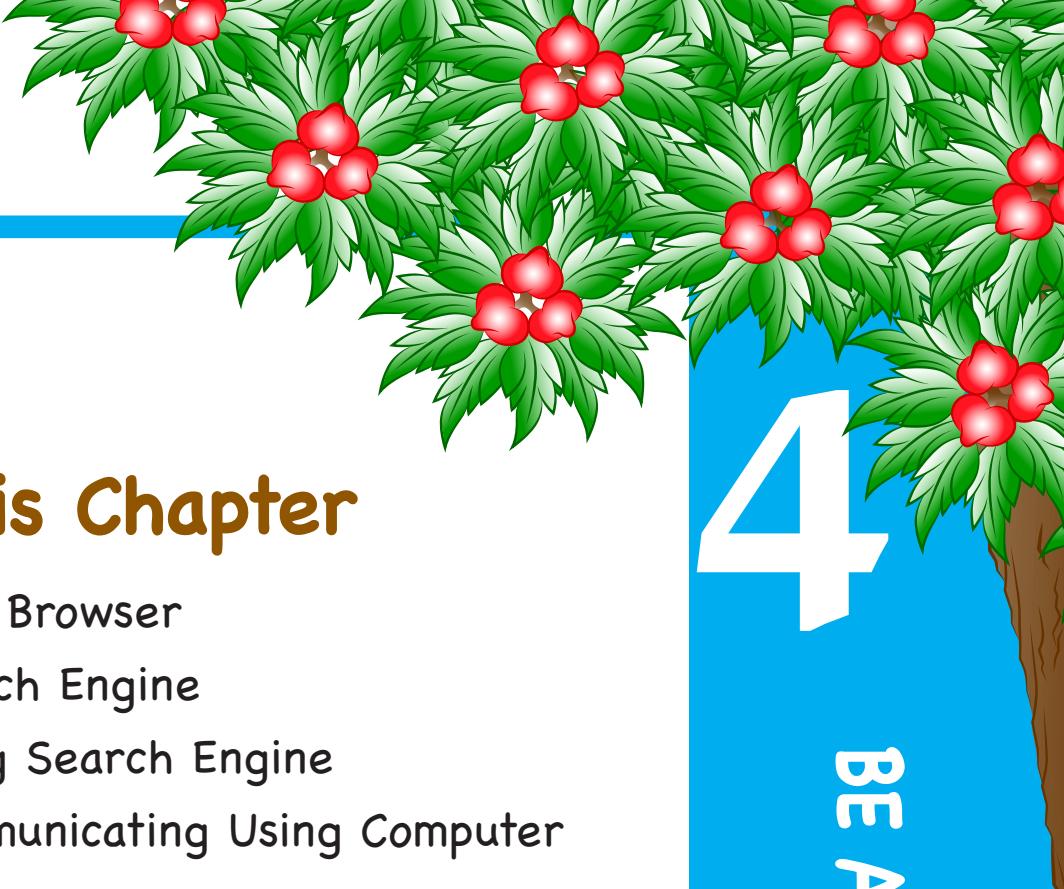
- 📎 <http://pcsupport.about.com/od/windows7/ht/create-password-windows-7.htm>

4. The importance of password security.

- 📎 http://www.ucalgary.com/it/files/it/Bulletin-Password_Security.pdf

4

BE AN EXPLORER



In this Chapter

- 4.1 Web Browser
- 4.2 Search Engine
- 4.3 Using Search Engine
- 4.4 Communicating Using Computer

Learning Objectives

1. Find information using search engines.
2. Communicate using a LAN messenger.

4.1 Web Browser

Today, the Internet has become a major source of information. We can obtain any type of information ranging from documents, images, sounds to videos. The information is presented through **websites** and **webpages**. These webpages may be linked or contain hyperlinks to other webpages. This information can be browsed using program called **web browser**.

We have learnt about popular web browsers such as **Internet Explorer**, **Safari**, **Mozilla Firefox** and **Google Chrome** in class four. Internet Explorer provides the following features and functions to browse websites and webpages.

- » **Navigation**: Allows user to go back and forward while browsing a website.
- » **Refresh**: Reloads a webpage.
- » **Stop**: Stops a webpage from opening.
- » **Home**: Opens a homepage.
- » **Address bar**: Provides space to enter URL.
- » **Bookmark**: Saves URL for future use.
- » **Tabbed browsing**: Opens many webpages on different tabs in a single browser window.
- » **Integrated search**: Allows searching quickly for information from the address bar.

The other browsers may look different but they all have similar features and functions as the Internet Explorer.

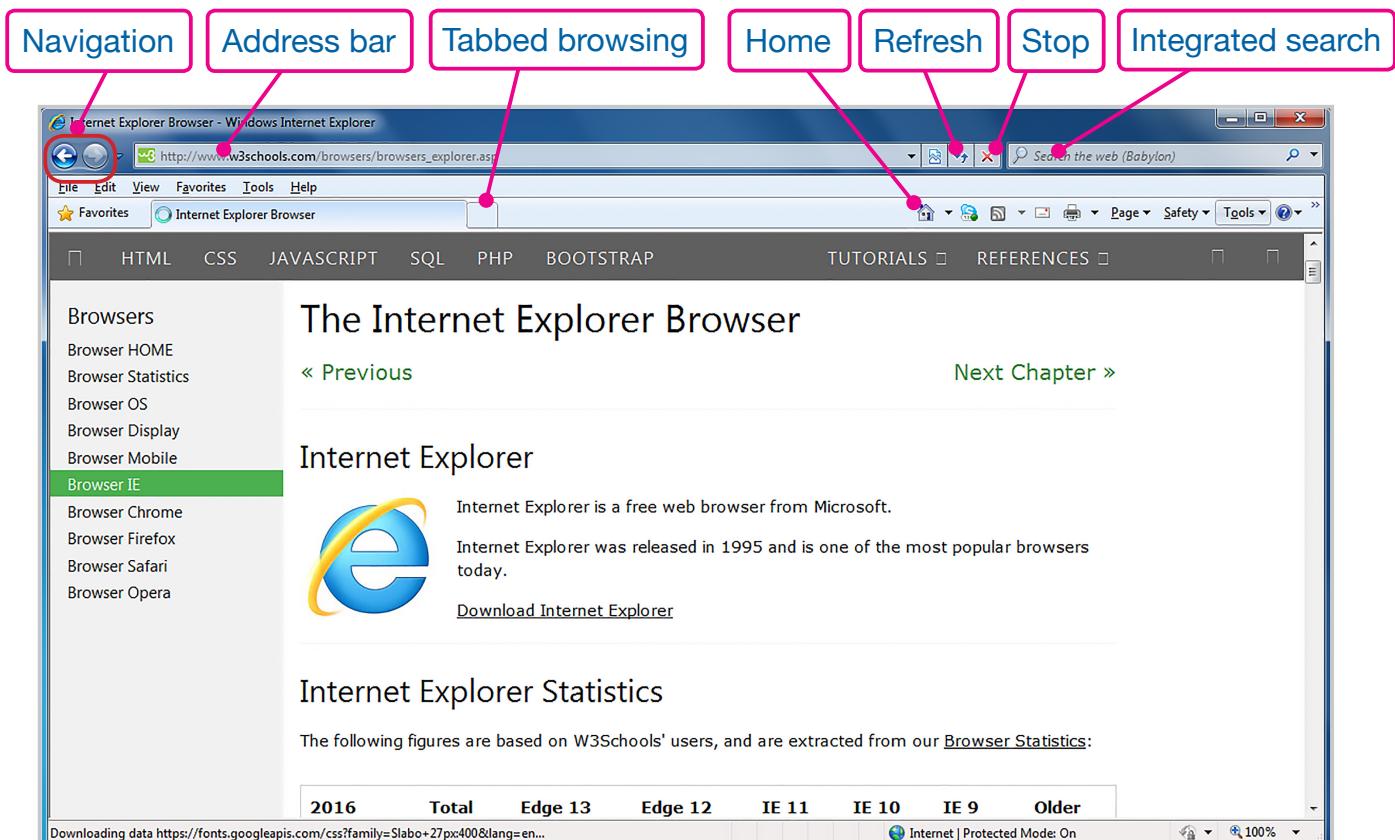


Figure 4.1 Internet Explorer web browser

Try This

Open the webpage, http://www.kidsgen.com/short_stories/the-bad-girl.htm using Internet Explorer and another web browser such as Firefox or Google Chrome. Compare the features available in both the browsers and list them using MS Word.

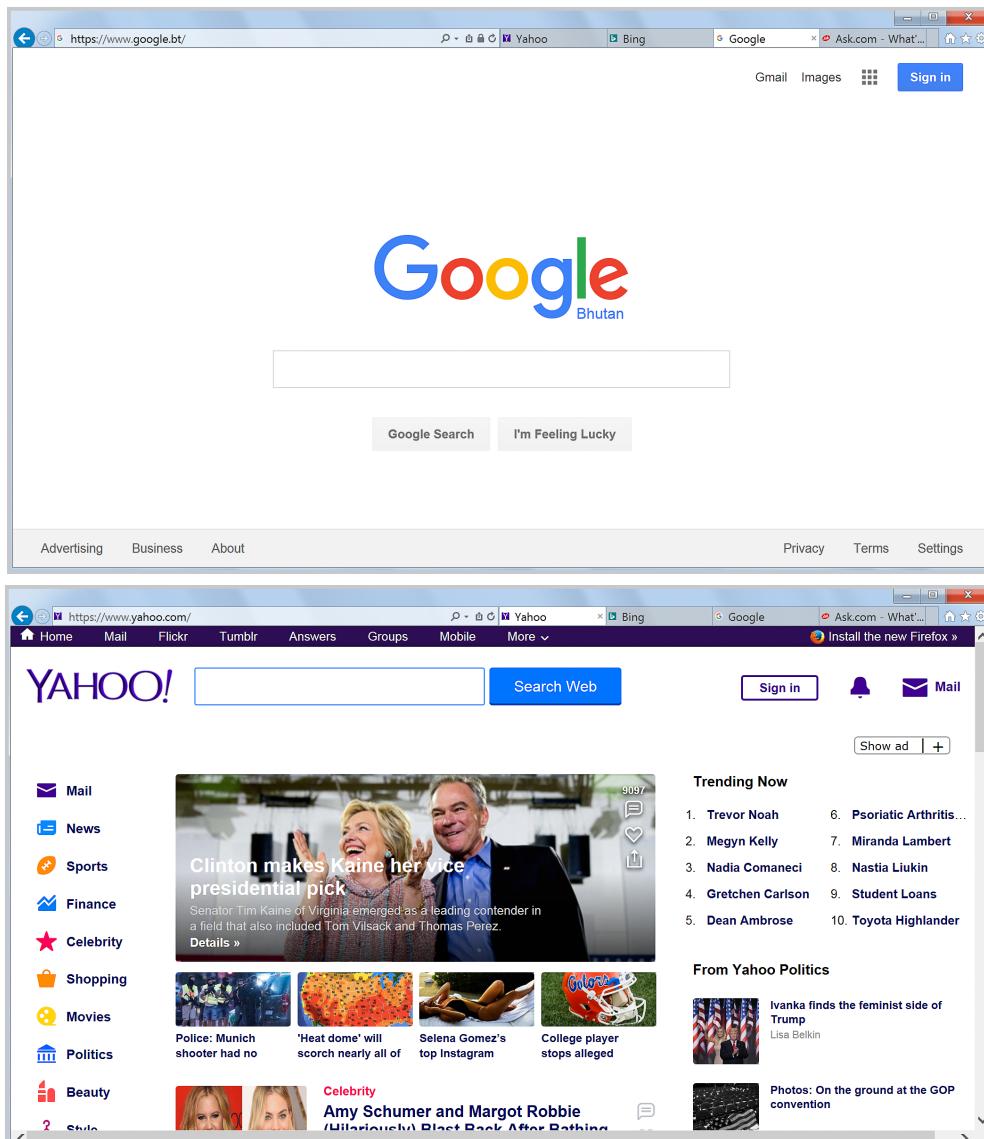
4.2 Search Engine

Internet contains huge amount of information which are stored in millions of websites across the world. It will be difficult to locate the desired information as we would not know which website will contain them. In order to help us find the desired information we use a special program called **Search Engine**. Search engine searches for the information

using a **keyword**. Keyword is the main word or phrase of the information we want to find. The search engine will look for information on millions of websites related to the keyword. It will collect, organize and display the search results which contains links to the information described by keyword.

For example, if you want information on the poem, "**The Tree House**" by **Lois Lowry**, you can use **title** and the **writer's name** as keyword. The search engine will provide a list of links that leads to websites and webpages containing information about the poem.

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



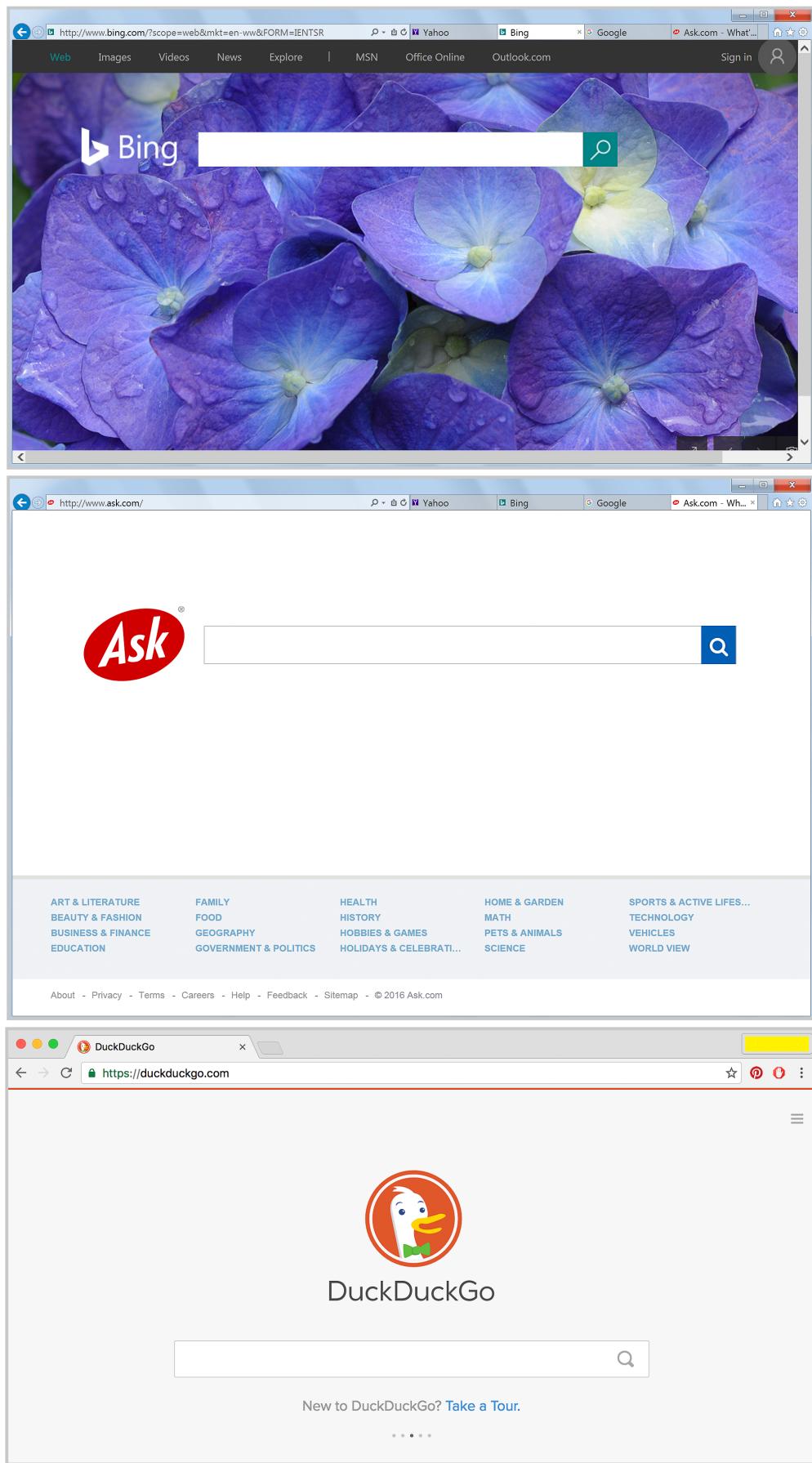


Figure 4.2 Examples of Search Engine

4.3 Using Search Engine

Let us use search engine to find some information about “Pyramid”.

- ① Open Google search engine on any web browser using uniform resource locator (URL) www.google.bt.
- ② Type the keyword “Pyramid” in the search box >> press Enter key or click on Google Search button. List of websites with a brief information related to the keyword will be displayed under Web tab. The most popular website will be at the top of the list.

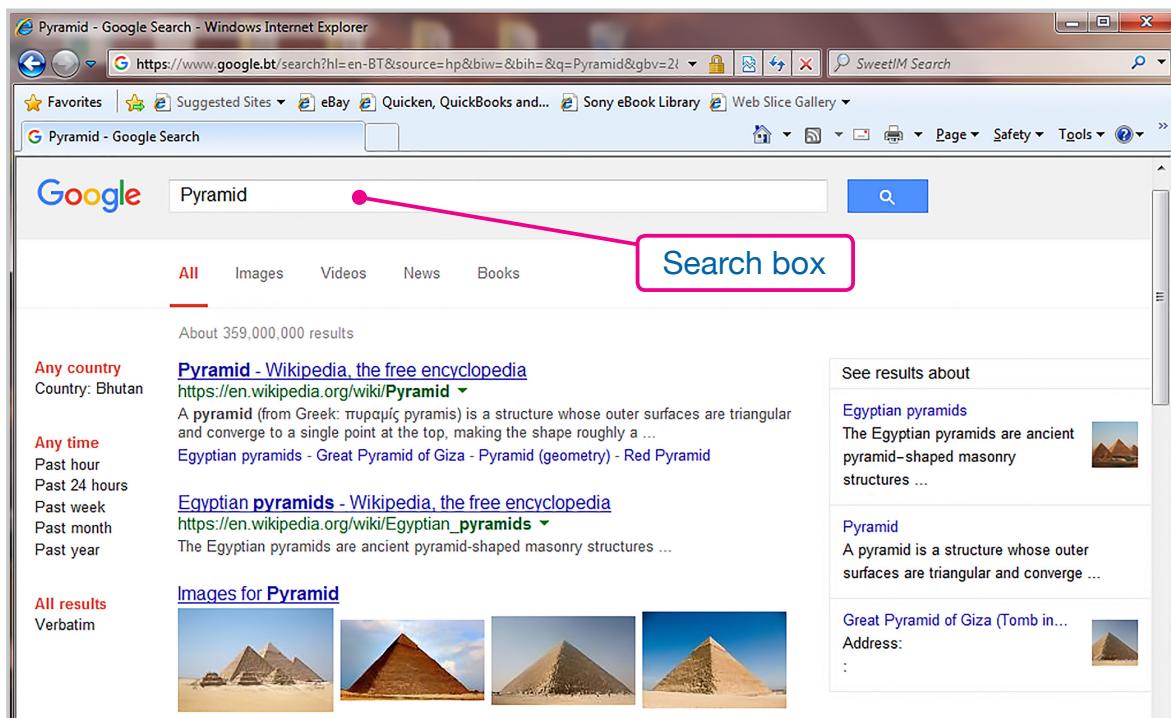


Figure 4.3 Search Engine

- ③ Click on the title of one of the links from the search result to view the information in detail. If the required information is not in the visited webpage, click on Back button to go back to the search list and click on another link. You can repeat this process till you get the information.

- 4 To view the images on the same keyword "Pyramid", click on the Images tab next to the Web tab. List of thumbnails is displayed. Small form of the image is called thumbnail.
- 5 Click on the thumbnail to view the actual image.

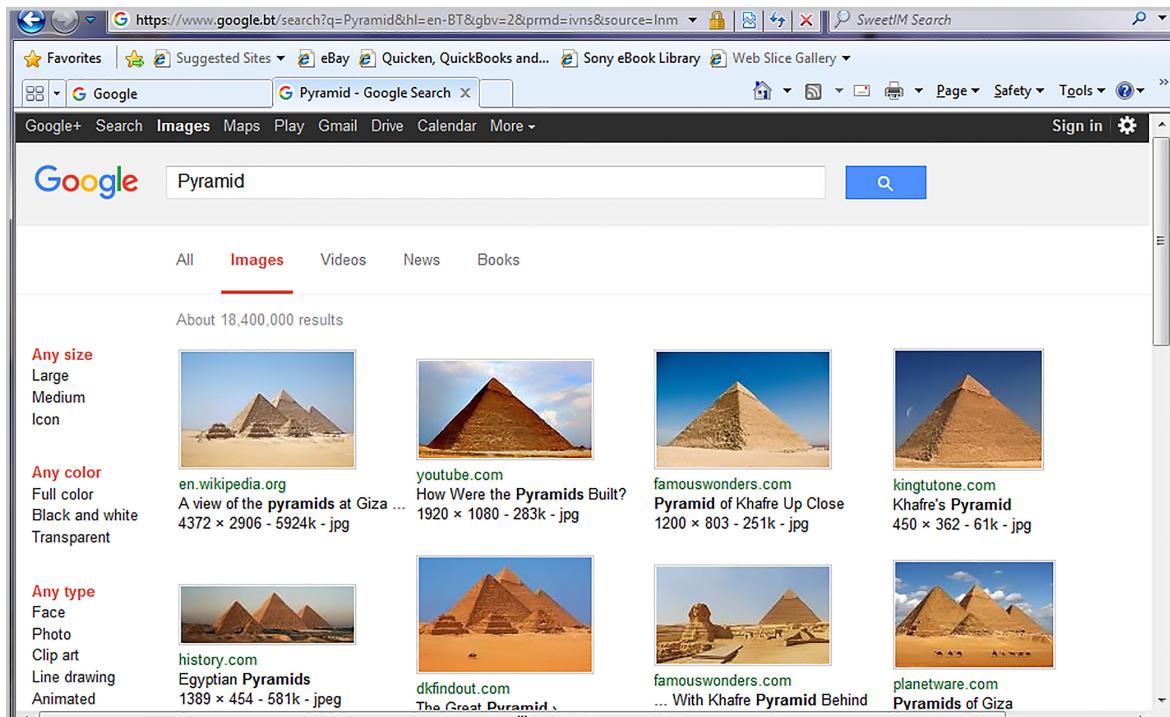


Figure 4.4 Searching for images

Several webpages can be opened at the same time to view the information. Web browsers have a feature called tabbed browsing which opens multiple webpages in a single web browser window but in different tab as shown in **Figure 4.5**. The ways for tabbed browsing are as follows:

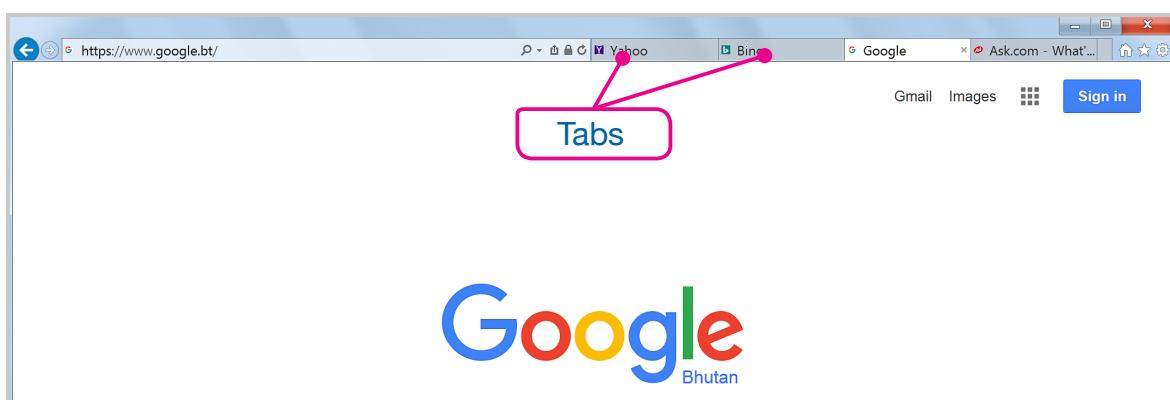
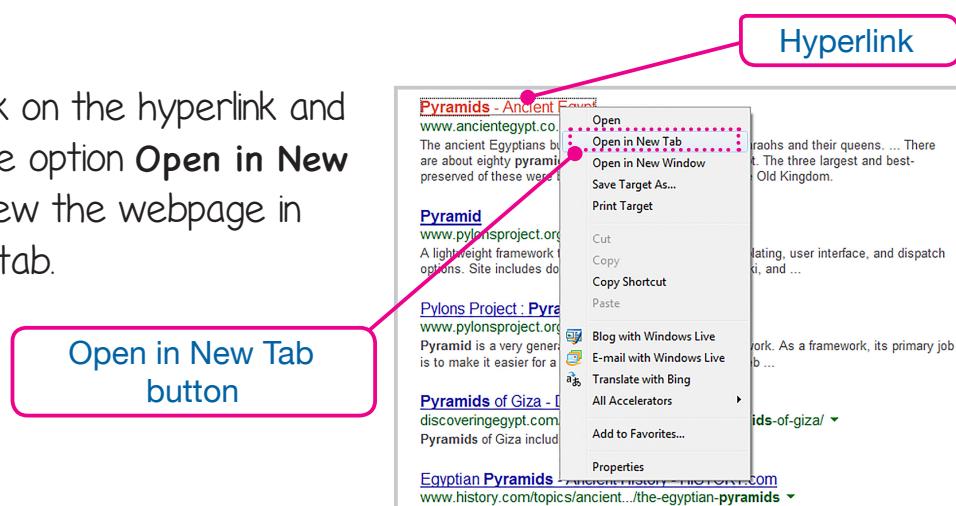


Figure 4.5 Tabs

- ① Right click on the hyperlink and select the option **Open in New Tab** to view the webpage in the new tab.



- ② Click on **New tab** to add a tab and type the URL to browse the website or webpage.

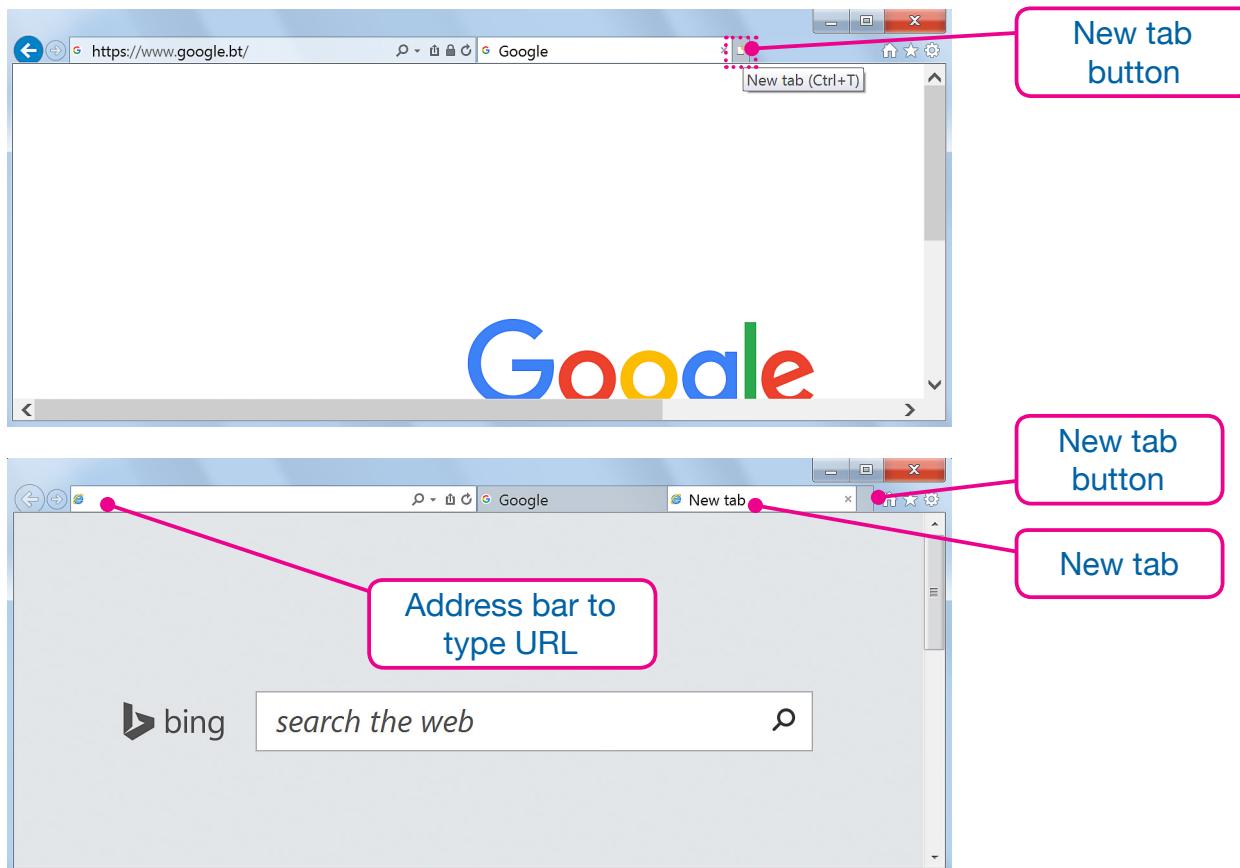


Figure 4.6 New tab

We can also search for information by directly typing the keyword in the address bar. The browser automatically uses the search engine to list the links of the websites or images related to keyword. This is called **integrated searching**.

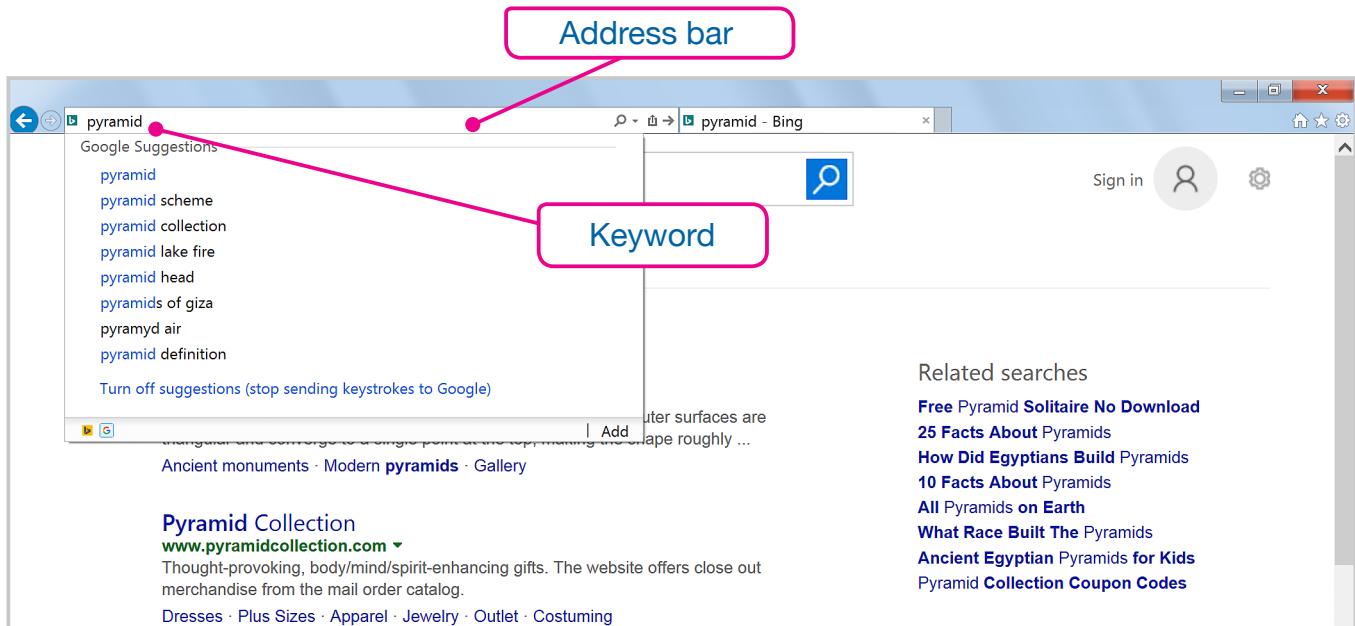


Figure 4.7 Integrated searching

Once you find the desired information and images, they can be generally copied and pasted in MS Word documents for your project work, story book and wall magazine. All information available in the Internet are not always correct. So make sure to check with your teacher or parent whether the information is correct or not before you use it in your work.

Try This On Machine

1. Work in group to complete the following tasks:
 - (a) Search for the information on the topic of your choice on the Internet.
 - (b) Open the webpage you want to view from the search list in a new tab.
 - (c) In MS Word, write down a few important points on the topic you have searched.
 - (d) Write the URL of the webpage from where you got the information at the end of the document.

4.4 Communicating Using Computer

Computers in places like office, home or computer laboratory in school can be connected to one another to exchange messages, and share files and folders, printers or software. This connection of computers within a small area is called Local Area Network (LAN). On LAN, we can share documents or exchange messages using LAN messengers without the need for Internet connection.

Some examples of the LAN Messenger are:

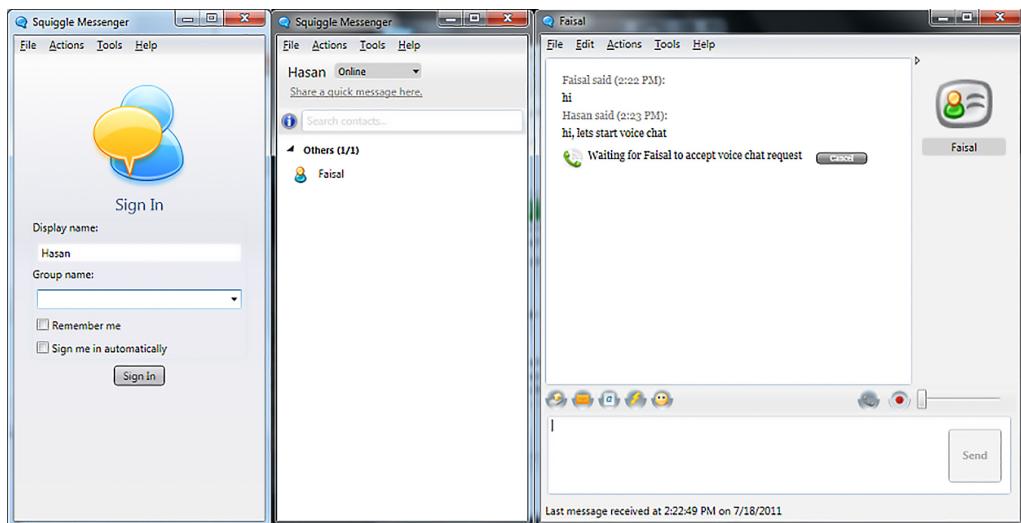


Figure 4.8 Squiggle Messenger

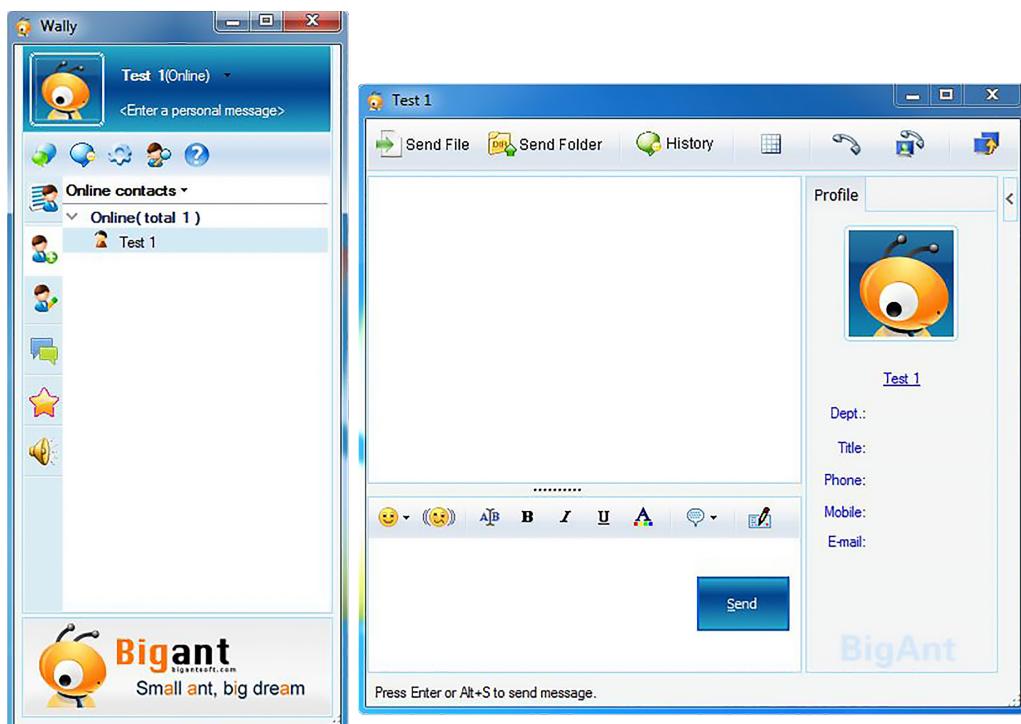


Figure 4.9 Bigant Messenger

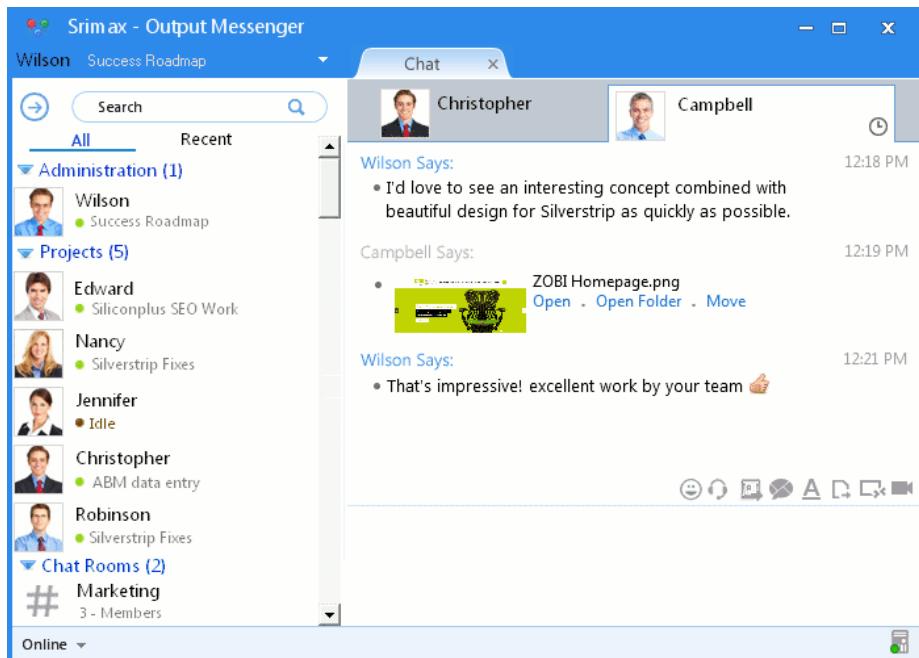


Figure 4.10 Output LAN Messenger

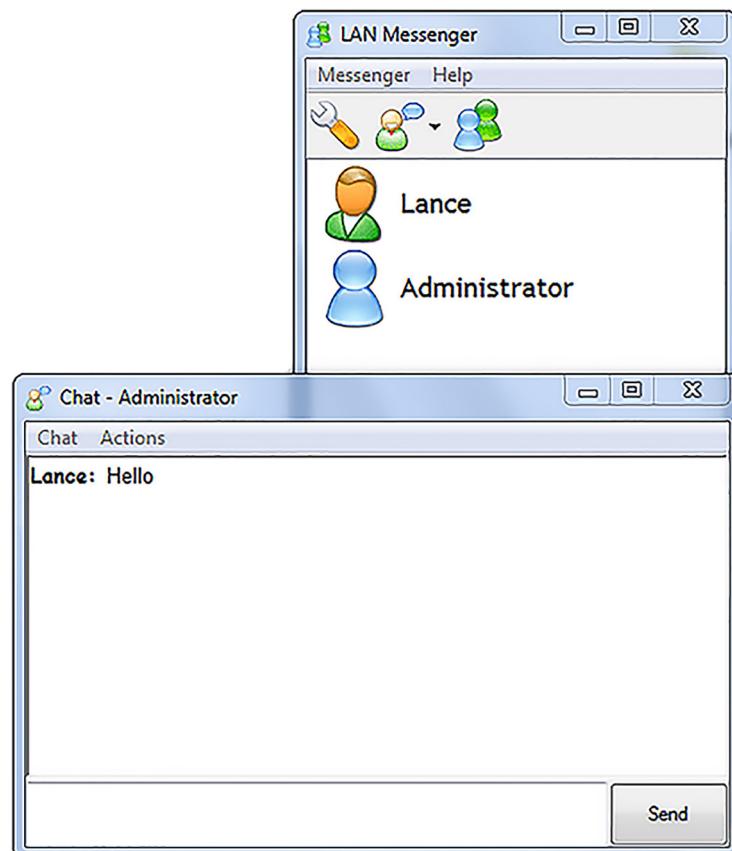


Figure 4.11 Qualia LAN Messenger

In **Qualia LAN messenger**, we can share files, broadcast messages, and start and save conversations.

Let us now look at Qualia LAN messenger.

Starting LAN Messenger:

Start > All programs > LAN Messenger

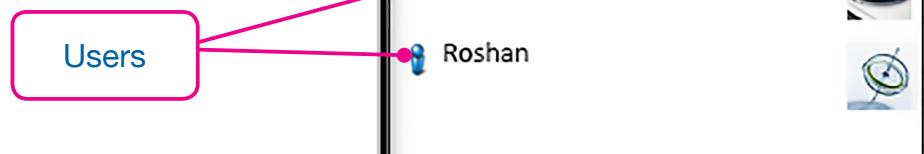


Figure 4.12 Qualia LAN messenger

Exchanging messages using LAN messenger is known as chatting. To chat with another user in LAN, double click on the user. Conversation window appears as shown in **Figure 4.13 (A and B)**.

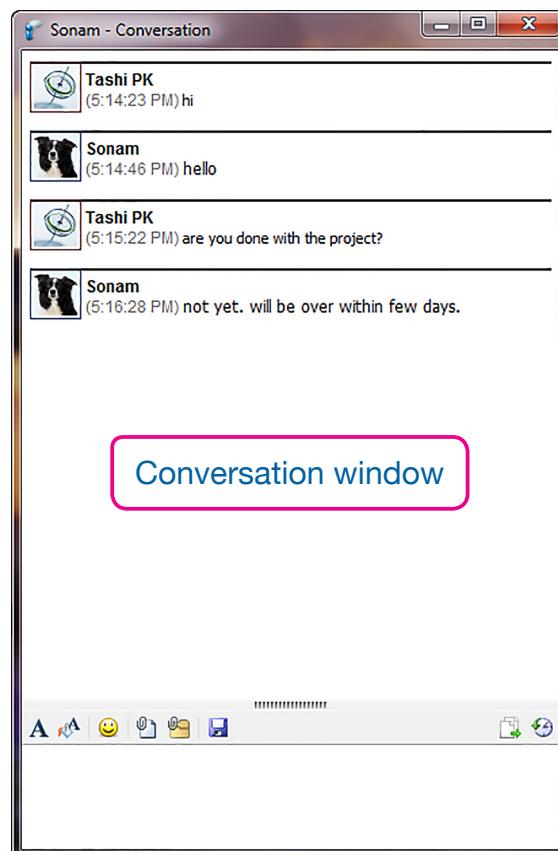


Figure 4.13 (A) Qualia LAN Messenger conversation window

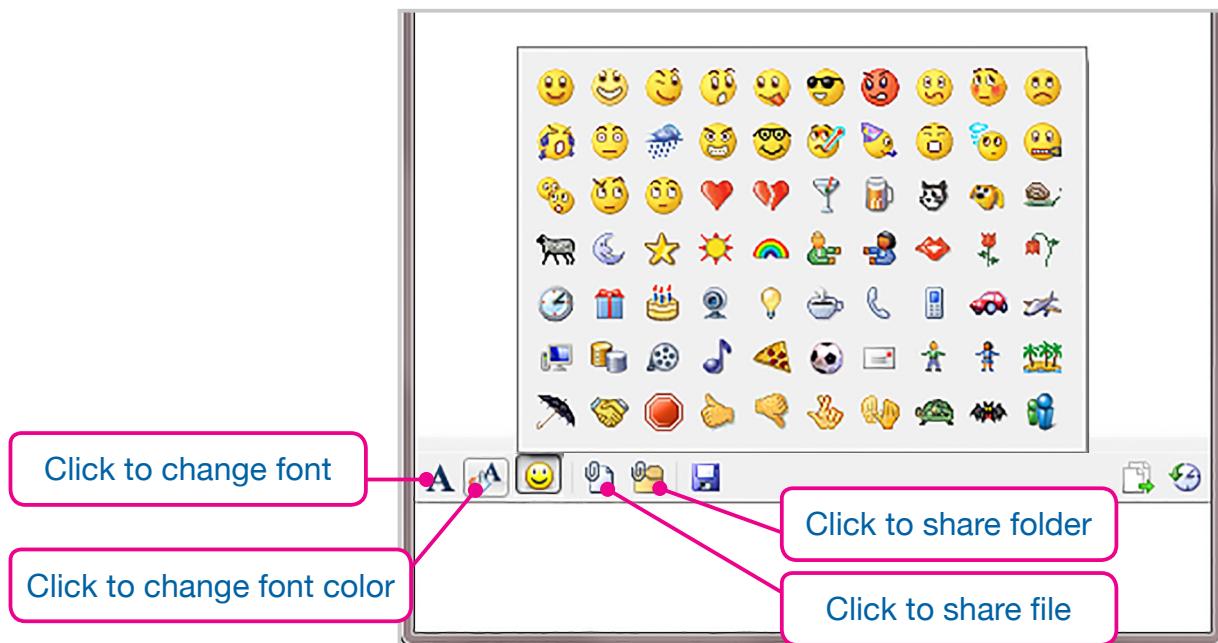


Figure 4.13 (B) Qualia LAN Messenger conversation window

Try This On Machine

1. Open the LAN messenger and complete the tasks:
 - (a) Send a public message "I am online, lets chat".
 - (b) Start chat with one of your friends and send the message "Hello".
 - (c) Use a smiley in your message.
 - (d) Send another message with different font or font colour.
 - (e) Send a photo to your friend.

Now You Know

1. Information in the Internet is located quickly by using a program called search engines.
2. Search Engines helps to search information on Internet using a keyword.

3. Keyword is a word or a phrase which best describes the information that is searched on the Internet.
4. Computers are connected to each other to form LAN through which they can communicate.
5. A special program called LAN messengers are used to chat, share files and folders, and broadcast public notifications within the LAN.

Check Your Progress

1. Rewrite the following statements correctly by changing the **underlined** word(s).
 - (a) Google is a network of computers in a small area like school.
 - (b) Refresh feature of a web browser stops a webpage.
 - (c) Text or image that provides link to other webpages is called URL.
 - (d) Google, Ask and Bing are the examples of web browser.
 - (e) The first page of a website is called page1.
 - (f) An instant messaging program like search engine does not require an Internet connection.
2. Write a short project on the topic “Sublimation” on MS Word. Use Internet to search for information on sublimation. Your project should include:
 - (a) Definition and process of sublimation.
 - (b) Diagrams and examples of substances that undergo sublimation.
 - (c) List the web address of the information.
3. Create your own group of 5 to 10 members. Share your project only to your group using LAN messenger.

Explore Further

1. Using LAN messenger, discuss on the following:
"Why do we have more hydropower stations in our country?" on a Public chat. Share pictures and files that are relevant to the topic.
2. Find information about our country on the Internet.
 - (a) Save the webpage in your computer.
 - (b) Save the images on the webpage in a folder.
 - (c) Copy some information and pictures in the website and paste it in MS Word and save it.

Weblinks

1. Searching the Internet using the search Engines

📎 <http://www.girton.cam.ac.uk/eguide-internet-search>

2. Search Tutorial

📎 <http://www.kidzworld.com/article/1900-search-engine-tutorial>

3. Types of Network

📎 http://compnetworking.about.com/od/basicnetworkingconcepts/a/network_types.htm

4. LAN Messenger

📎 http://en.wikipedia.org/wiki/LAN_messenger
📎 <http://www.techgleam.com/best-lan-messengers-for-windows/>
📎 <http://www.aniesoft.com/top-lan-messenger-free-window>

5

ANIMATE WITH SCRATCH

In this Chapter

- 5.1 Motion Blocks
- 5.2 Sound
- 5.3 Looks

Learning Objectives

1. Change the motion of the object.
2. Add sounds and speech to the animation.
3. Modify appearance of the object.

5.1 Motion Blocks

In class four we learned about the functions of some Motion blocks such as move, turn, change x and y positions and go to. Scratch also comes with blocks to make the Sprite glide to a particular location, check whether it has reached the edge of the Stage and change its direction, which enhance the behaviour of the motion of the Sprite.

A. If on edge, bounce block

This block checks whether the Sprite is touching the edge of the screen. If it touches, it bounces and stops on the edge of the screen. Generally, it is used along with the Move block. For example, scripts in **Figure 5.1 (A)** will move the Sprite go beyond the edge of the screen, while scripts in **Figure 5.1 (B)** will make the Sprite bounce and stop at the edge of the screen.

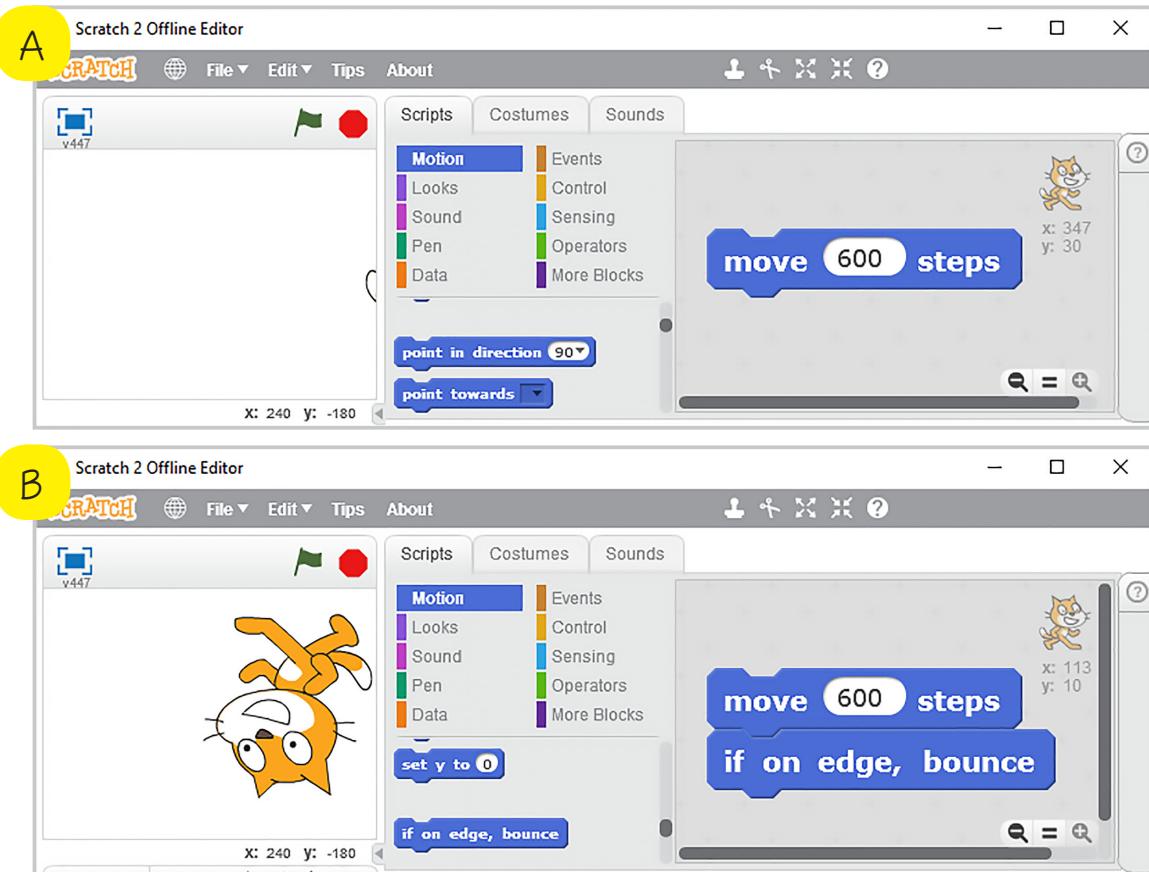


Figure 5.1 if on the edge, bounce block (A) and (B)

B. Glide to block

This block moves the Sprite smoothly to the specified X and Y position within the specified duration. You can slow down or speed up the motion by changing the duration of the glide.

C. Point in direction block

This block points the Sprite in a specified direction. Generally, it is used along with the move block. Direction can be changed by selecting the value from the dropdown list as shown in **Figure 5.2**.

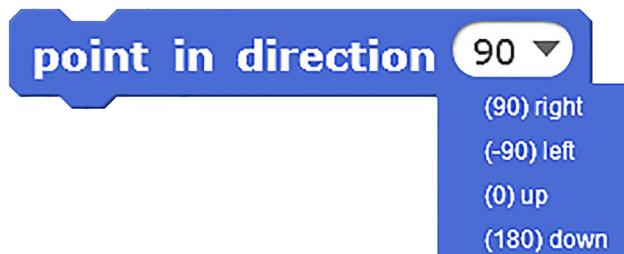


Figure 5.2 Specifying directions.

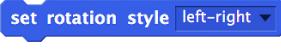
For example, the Cat points in different directions as shown in **Figure 5.3**.



Figure 5.3 Sprite in different directions

D. Set rotation style block

This block sets the rotation style of the Sprite. Generally, it is used along with if on the edge, bounce block to see the effect clearly. There are three options to select in this block. They are left-right, do not rotate, and all around.

- Left-right 



The left-right rotation style flips the Sprite horizontally.

- Don't Rotate 



If a Sprite's rotation style is set to "do not rotate", then Sprite faces only in one direction.

iii. All Around



The left-right rotation style flips the Sprite vertically.

Try This On Machine

Create an animation in which a boy moves from left to right on the stage such that when he touches the edge of the screen, he bounces and flips horizontally, and glides to bottom-centre of the stage.

5.2 Sound

We learned how to add sounds from the Scratch Library to Sprite in Class IV. We can also add sounds like music and voice recordings from other sources to make animations in Scratch interesting. There are two ways to add sound: firstly, by recording a sound in Scratch, and secondly by uploading an existing sound to Scratch.

A. Adding Sound

Scratch provides a simple tool to record our voice or music using a microphone. The recorded sound is added to the list of sound in the sound block of the Sprite or Backdrop. This sound can be given to the

Sprite of Backdrop. Follow the steps given in **Figure 5.4** to record a new sound for the Sprite.

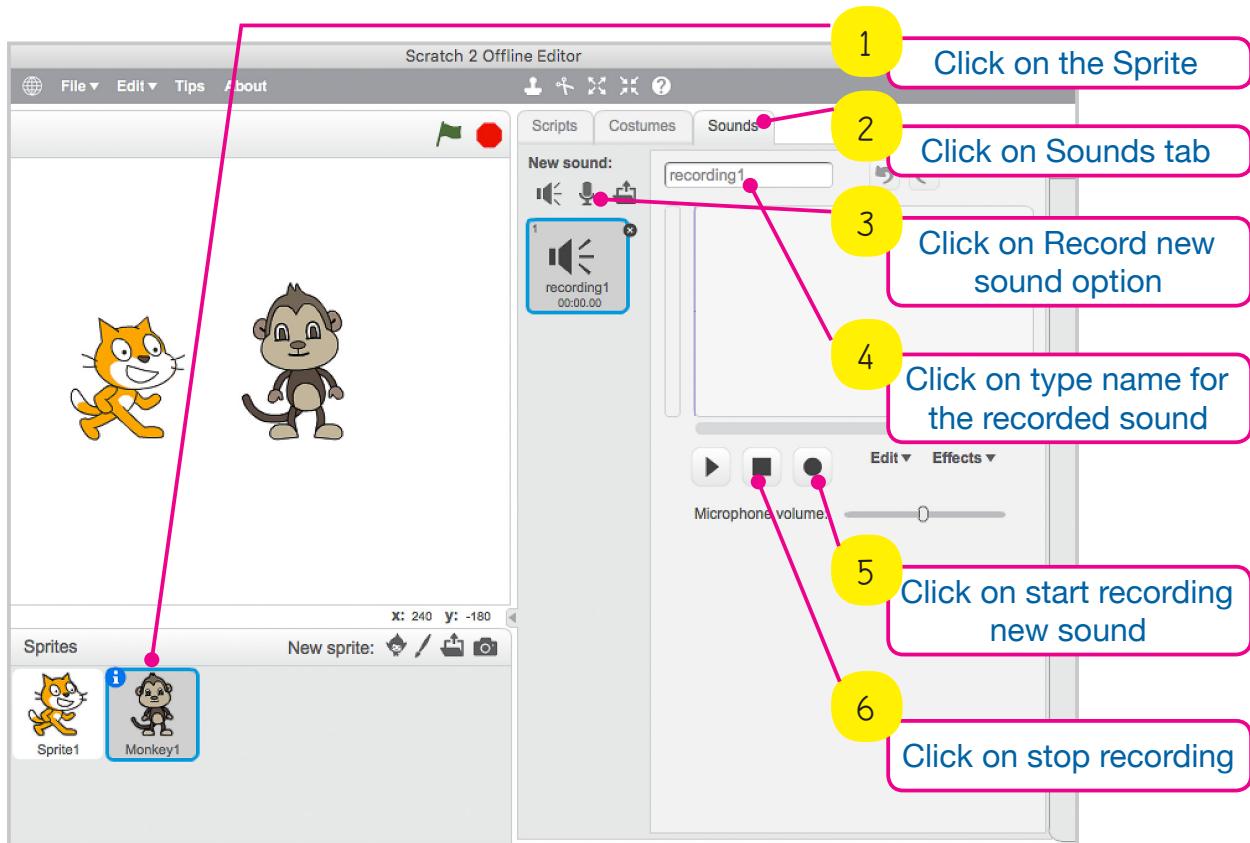


Figure 5.4 Recording a sound

Once the sound is recorded in the Scratch, the new sound will be available in sound blocks. For example, in play sound block as shown in **Figure 5.5**, the recorded sound can be view by clicking on the down arrow on the block. To assign the recorded sound to the Sprite or Backdrop, select the recorded sound.

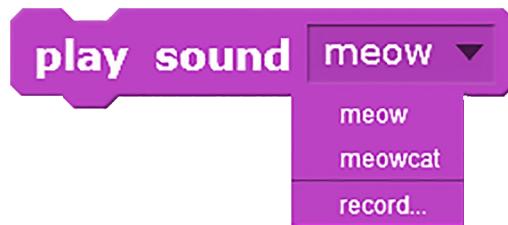


Figure 5.5 Specifying recorded sound in the Sound block

Sounds available in the computer, other than in Scratch Library, can also be used in Scratch. We can also add sounds from other storage devices like thumb drives, external drives, CDs and DVDs. To use the sounds from different sources, they have to be added to Scratch. The process of adding sound to Scratch is also called **uploading**.

Follow the steps given in **Figure 5.6** to add sound to Scratch.

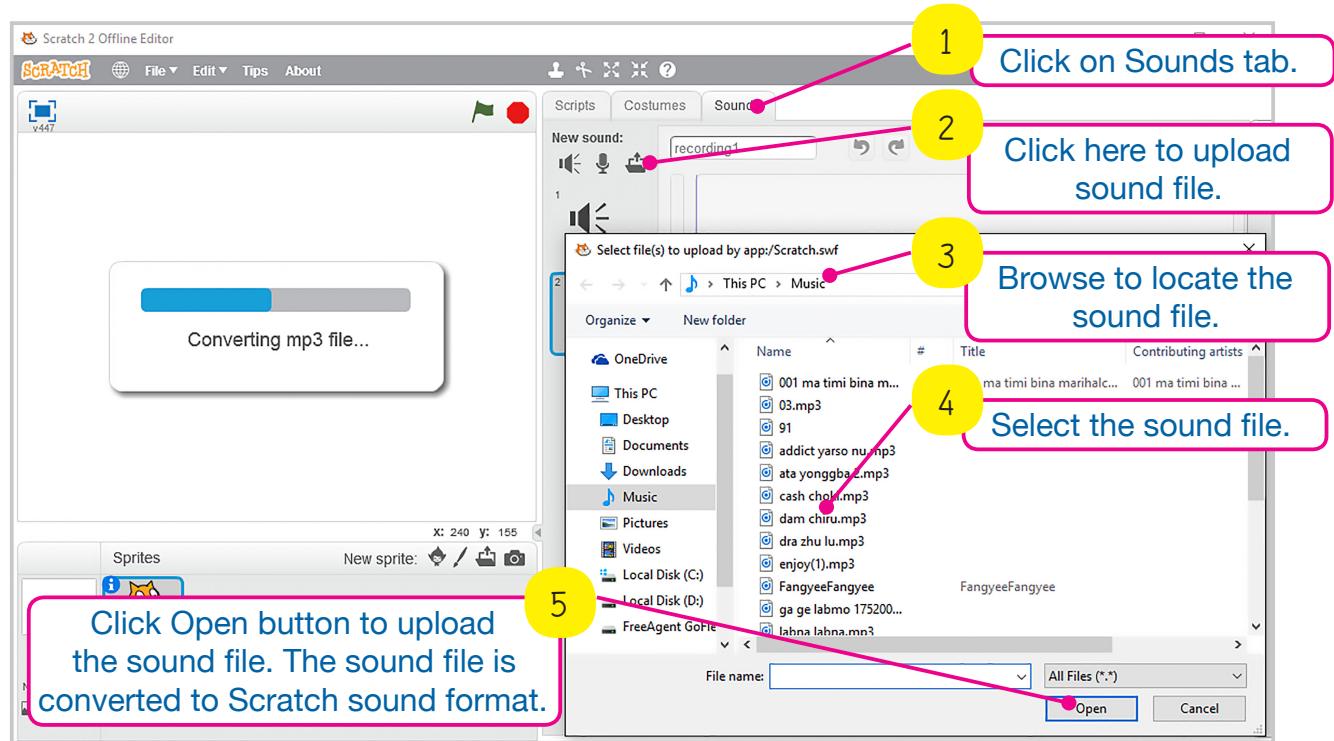


Figure 5.6 Uploading a sound

Once the sound is uploaded in Scratch, it will appear in sound blocks. To assign the uploaded sound to the Sprite or Backdrop, select the uploaded sound as shown in **Figure 5.7**.

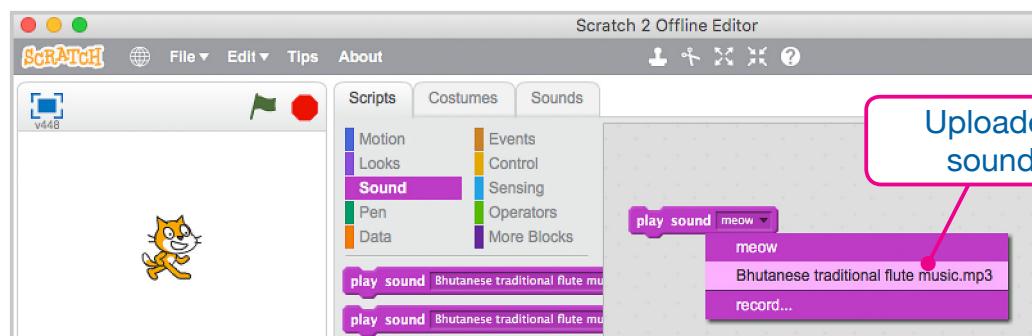


Figure 5.7 Assigning uploaded sound to Sprite

B. Saving Sound

The recorded and uploaded sounds only exist with the Sprites and Backdrops of the Scratch file you have created and saved. If you delete Sprites or Backdrops from this file, the sounds also get deleted with them. Therefore, if you want to use the recorded sounds in future, these sounds have to be saved into the computer. To save the recorded sounds, follow the steps given below.

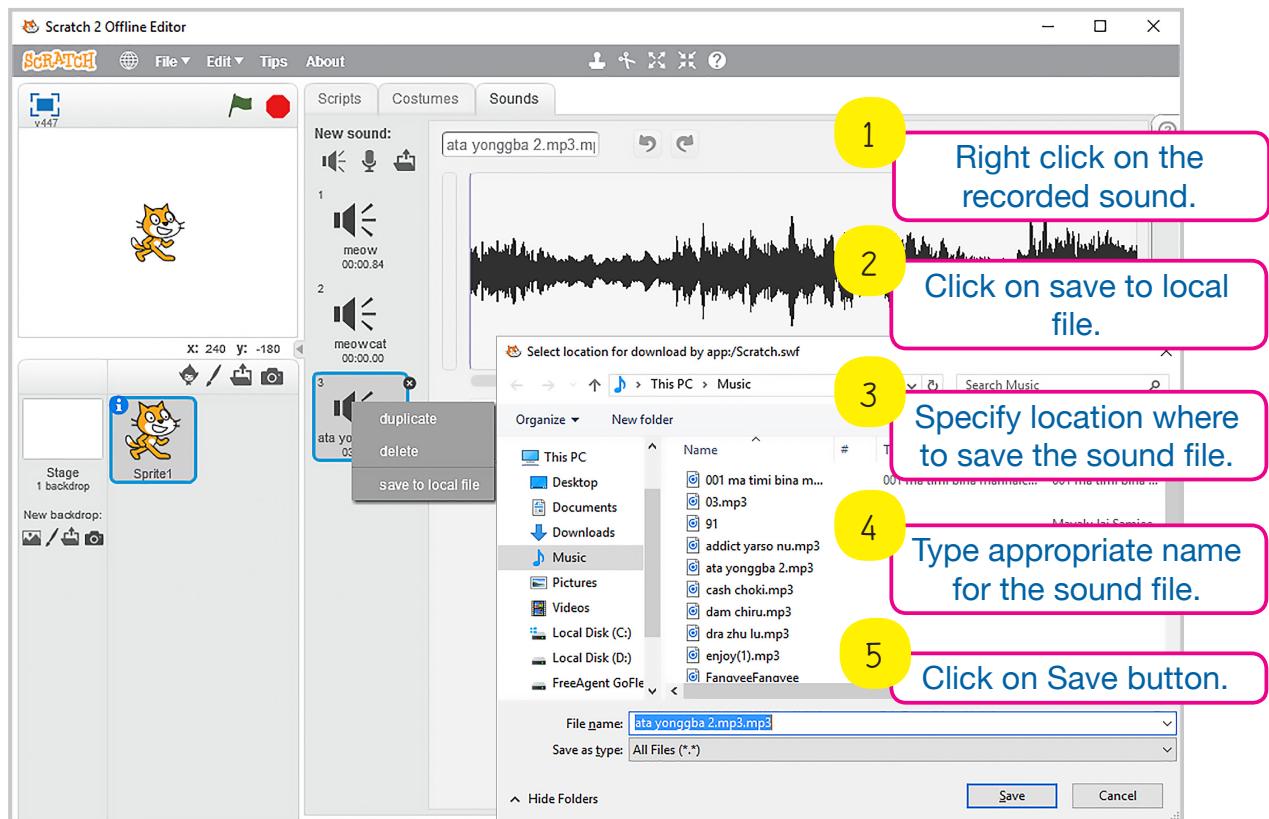


Figure 5.8 Saving the recorded sound

The saved sounds in the computer needs to be uploaded when used in other animation.

Try This On Machine

- Record a sound which says, "Good Morning! Let us listen to a song" in Scratch. Then create an animation in which a Sprite says "Good Morning! Let us listen to a song.", and the song starts to play.

5.3 Looks

Sprites in animation can be made interactive by using speech and thought bubbles. This can be done by using blocks under Looks category.

Let us discuss the following blocks.

A. Say block

This block is used to show what the Sprite is saying. Whatever Sprite says, it appears in a speech bubble. Similarly,  block is used to show what the Sprite is saying, but only for a given duration.

B. Think block

This block is used to show what the Sprite is thinking. Whatever Sprite thinks, it appears in a thought bubble. Similarly,  block is used to show what the Sprite is thinking, but only for a given duration.

C. Hide and Show block

In animations you might need to make Sprite to disappear and appear from the Stage.

This can be done using following blocks:

-  block is used to make the Sprite disappear from the Stage.
-  block is used to make the Sprite appear on the Stage.

Try This On Machine

Create an animation where a Sprite walks towards the edge of the screen from a distance. When it touches the edge of the screen it thinks "Now I should hide" and the Sprite disappears. It then reappears in the centre of the screen.

A. Switch Costumes

Appearance of Sprite can be changed during animation by using different costumes. In Scratch, Sprites are provided one or several costumes. The costumes for the Sprite can be viewed, modified or created in Costumes tab. The default Sprite cat has two costumes as shown in Figure 5.12.

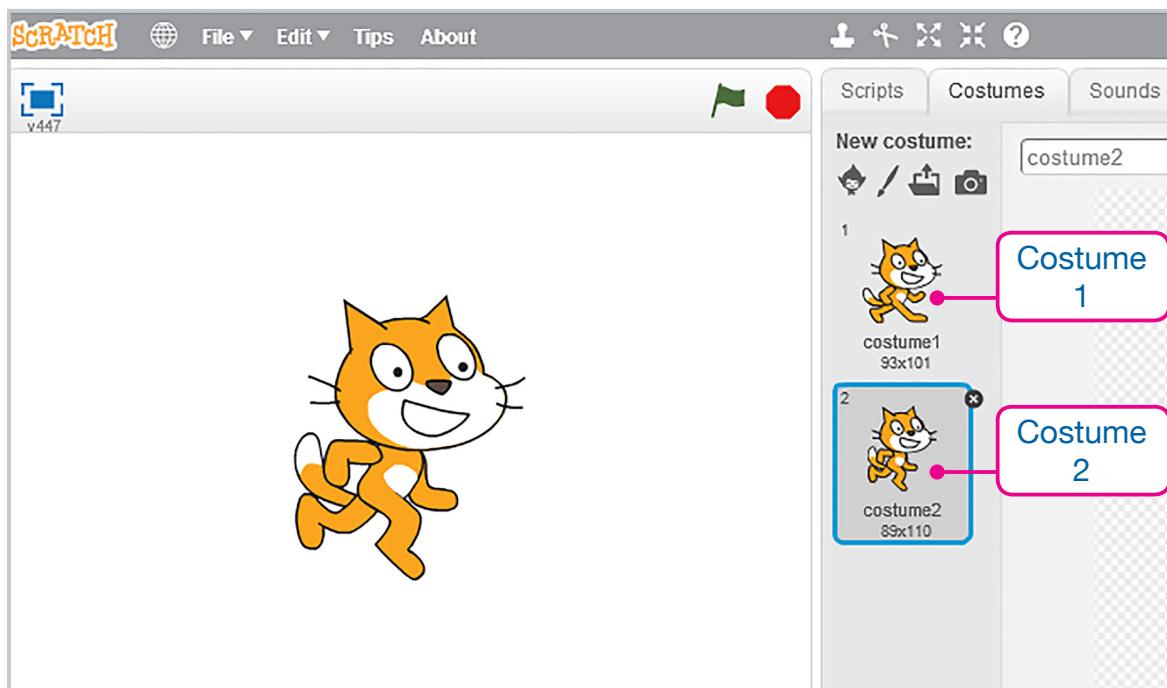


Figure 5.8 Costumes of default Sprite cat.

The costumes for the Sprite can be switched among available costumes in an animation using the following blocks:

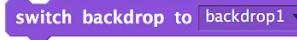
- next costume** block is used to change costume to the next available costume.
- switch costume to []** block is used to directly switch the Sprite to the selected costume.

A. Grow and shrink

The size of the Sprite can be changed in an animation. Changing the size of the Sprite gives the effect of coming closer or moving away from the viewer in an animation. The size of the Sprite is changed by the following blocks:

- i.  block also changes the size of a Sprite but in terms of percentage of its original size. If you set the value to 100, the Sprite's size will be of original size. The value less than 100 will reduce the size while value more than 100 will increase the size of the Sprite. At the fixed value, this block changes the size of the Sprites only once even if it is used many times.
- ii.  block changes size by specified value. The positive value will increase the size while a negative value will decrease the size of the Sprite. The value 0 will not change size of the Sprite. This block changes the size of the Sprites every time it is used.

A. Switch Backdrop

In an animation the background scene shows the location and situation where the event is taking place. Therefore, the background scene needs to change depending on the story of the animation. Scratch provides  block, which is used to change the Stage background with a specified Backdrop. Several backdrops are available in Scratch Library. We can also upload additional Backdrops and use them.

The backdrops can be switched among available backdrops in an animation using the following blocks:

- i.  block is used to change backdrop to the next available backdrop.
- ii.  block is used to directly switch the background to the selected backdrop.

A. Graphic effect

The appearance of the Sprite can be changed by changing the costume. Its appearance can also be changed by using graphic effect blocks. The following blocks are used to apply effect on the Sprites and Backdrops:

- i.  block applies selected effect such as color, fisheye, whirl, pixelate, mosaic, brightness or ghost to Sprites or Backdrop. The graphic effect on the appearance is set to the value entered.
- ii.  block applies selected effect such as color, fisheye, whirl, pixelate, mosaic, brightness or ghost to Sprites or Backdrop. The graphic effect changes by the value entered.

Try This On Machine

Create an animation in which a Sprite dances to a song. As it dances, the costumes, backdrops and size must change.

Now You Know

1. Sprite can detect the edge of the screen and turn.
2. Sprite can be made to appear or disappear in an animation.
3. Rotation styles and direction blocks makes Sprite turn in different ways.
4. Sprite can think, say something and change its appearance in an animation.
5. We can record sound for our animation and save it.
6. Sound can be uploaded from different sources to Scratch and used in an animation.

Check Your Progress

1. Answer the following
 - (a) Differentiate between:
 - (b) move and glide blocks.
 - (c) Next costume and switch costume to blocks.
 - (d) Point in direction and set rotation style blocks.
2. Fill in the blanks with appropriate words.
 - (a) Slow motion effect on the movement of the Sprite is brought about by block.
 - (b) If  is pointing in direction 90 then  is pointing in direction
 - (c) By default, the rotation style is
 - (d) Size of a Sprite can be changed only once by using block.

Explore Further

1. Create an animation in which a balloon moves up and on touching the edge, it bursts and says "Happy Birthday" for a while and sings a birthday song.
2. Create an animation in which a boy/girl starts to walk from the bottom-left of the screen. He/she makes one complete round on the edge of the screen. Every time he/she touches the edge, his/her appearance changes.

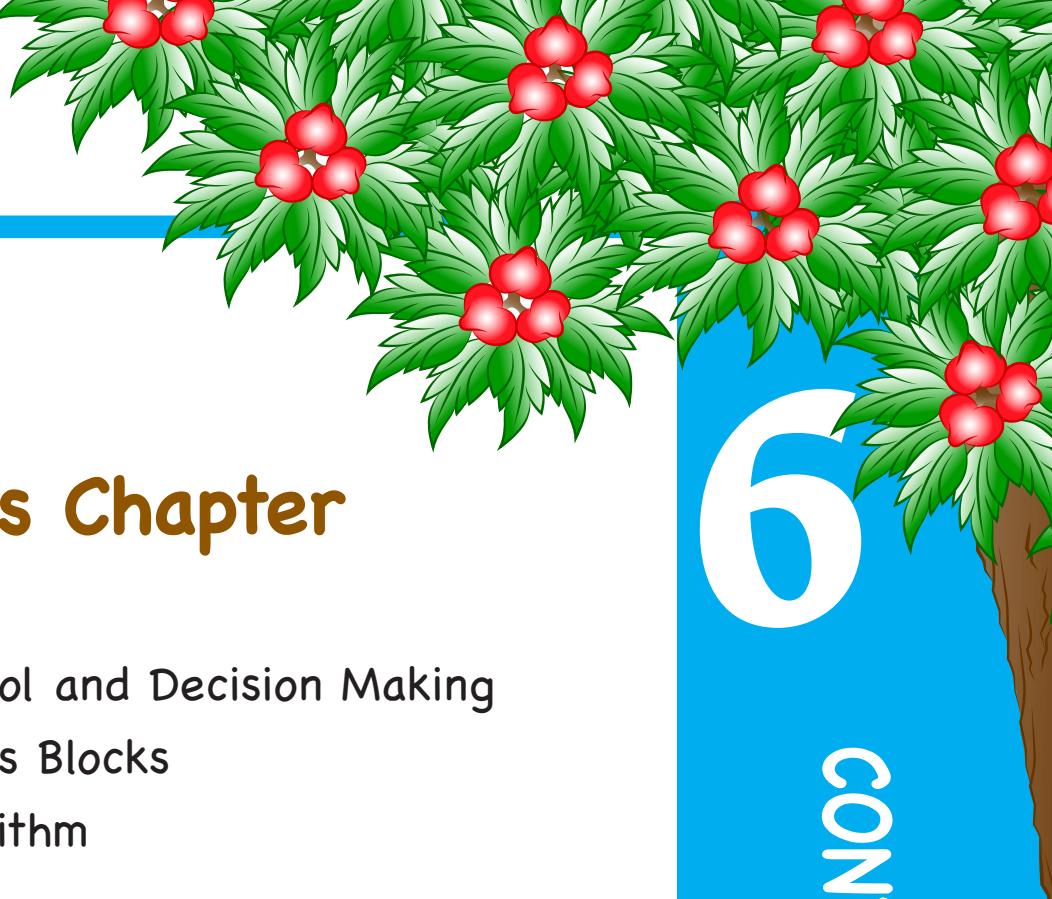
Weblinks

1. Scratch project website:

📎 <https://scratch.mit.edu>

6

CONTROL YOUR ANIMATION



In this Chapter

- 6.1 Pen
- 6.2 Control and Decision Making
- 6.5 Events Blocks
- 6.7 Algorithm

Learning Objectives

1. Create geometrical shapes by using motion of the object.
2. Control appearance and behaviour of objects using conditions.
3. Use algorithms to solve problems.

6.1 Pen

Pen blocks are used to draw shapes and patterns on the screen. These blocks are generally used with Motion blocks. As the Sprite moves on the stage, the Pen blocks along with Motion blocks creates different geometrical shapes. We can also use pen blocks to change the thickness of the Pen or to duplicate Sprite on the Stage.

The functions of some of the Pen blocks under Pen category are as follows:

1. **pen down** block turns on the pen allowing the motion of the Sprite to draw shapes on the screen.
2. **pen up** block turns off the pen and stops the Sprite from drawing on the screen.
3. **set pen shade to** and **set pen colour to** blocks set the colour of the pen. To select a colour, click on the colour box in **set pen color to** and then click on the coloured area within the Scratch Window with colour picker  as shown in **Figure 6.1**.



Figure 6.1 Using colour picker to select colour.

Colour can also be specified using values in **set pen shade to** . Some of the values and their corresponding colours are:

0 : red

70 : green
 130 : blue
 170 : magenta

4. **clear** block erases all marks created previously by pen block on the Stage. It is used to clear the drawings for next event in an animation.

5. Pen Size

Pen size blocks are used to change the thickness of the pen. The default size of the pen is 1, which is also the minimum thickness. Higher the value, thicker will be the size of the pen. With varied size (thickness), Sprite can draw shapes and patterns. Pen size can be changed with the following blocks.

- (a) **set pen size to** block sets the size of a Pen to the specified value. At a fix size, the pen draws the lines of uniform thickness even if it is used many times.
 - (b) **change pen size by** block changes the thickness of the pen by the specified value. This block changes the size of the pen every time it is used.
6. **stamp** block can create multiple copies of a Sprite on the Stage as shown in **Figure 6.2**. These copies of Sprite cannot be moved or modified. They are generally used to create the effects of transition in motions or patterns.

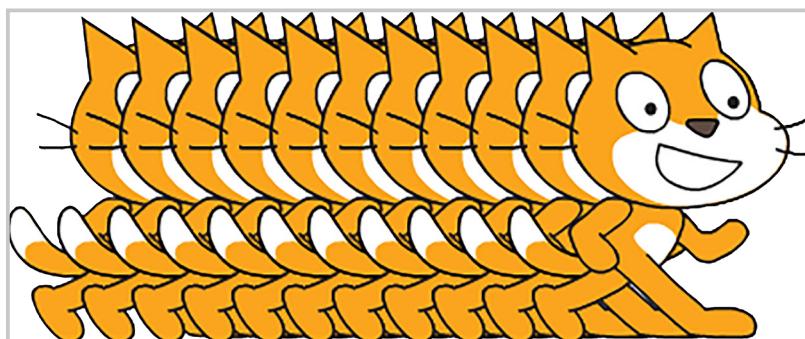


Figure 6.2 Example of using Stamp

Try This On Machine

Create an animation in which a Sprite draws a Square of different colour sides and leaves its image at each corner.

6.2 Control and Decision Making

Animations and games are made interactive by including decisions in the scripts. In Scratch, the following blocks are used to make decisions based on the conditions and to perform a task multiple times.

A. Repeat block

A sequence of instruction is repeated many times in the program to perform a task multiple times. In programming, it is called Iteration or Loop.

The task to be carried multiple times are placed inside the following blocks:



1. block makes the blocks inside it perform for a specified number of times. If the value assigned is 10, then the task will be repeated 10 times.



2. block makes the blocks inside it perform the task over and over again until the Script is stopped.

B. Wait block



It halts the task for a specified number of seconds then continues to run the next block.

C. Sensing blocks

These blocks are used to make Sprites and Backdrops detect other objects, key strokes, mouse clicks or colours. This action is called sensing. Sensing blocks are generally used along with Control blocks to make decisions on what to do next.

The functions of some of the Sensing blocks are as follows:

1. block detects whether the Sprite is touching the specified Sprites, edge of the Stage, or mouse-pointer.
2. block detects whether the Sprite is touching the specified colour on the stage.
3. block detects if the specified colour (first colour) of the Sprite touches the specified colour (second colour) of another object.

D. If-Then and If-Then-Else Blocks

These blocks are used to make decisions based on a condition. Let us look at a situation as shown in **Figure 6.3**. On any day, whether to wear a warm clothes depends on the condition of the weather. If the weather is cold, we can decide to wear warm clothes and if the weather not cold, we can decide not to wear warm clothes.

Condition : Cold weather

Action : Wear warm clothes or not

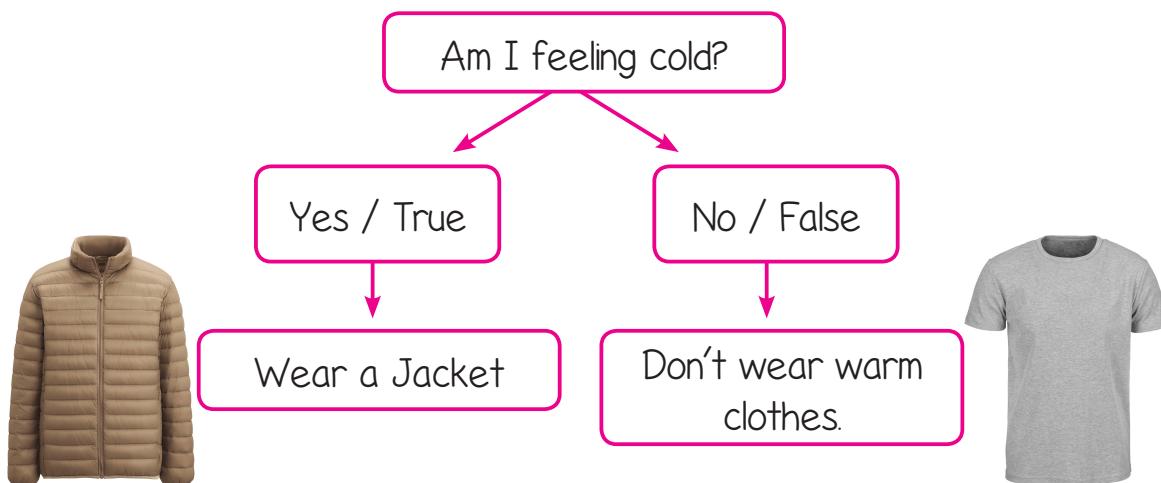


Figure 6.3 Making a decision

In Scratch, decisions are based on the condition which are placed inside  of the Control blocks. Some of the Control block used for decision making are as follows:

1. If-then block checks the condition and if the condition is true, then it runs the blocks inside it.

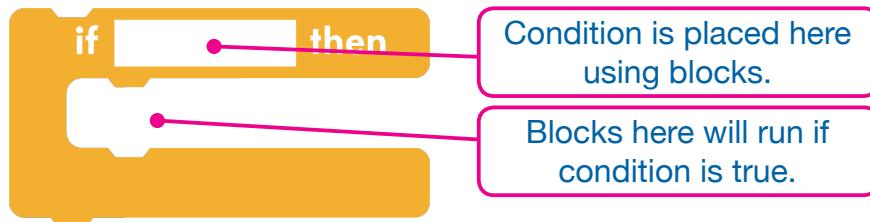
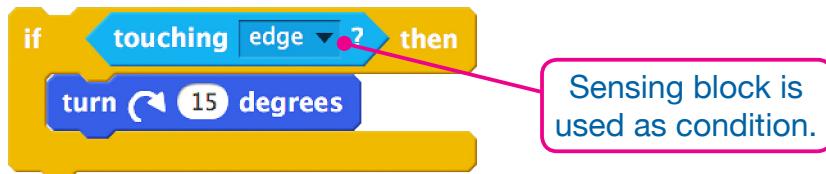


Figure 6.4 Using if-then block

Example:

Condition : Sprite touches the edge

Action : turn 15 degrees



Sprite will turn 15 degrees only if it touches the edge of the Stage.

2. If then else block checks the condition and if the condition is true, it runs the blocks under if portion. If the condition is not true (false), it runs the blocks under else portion.

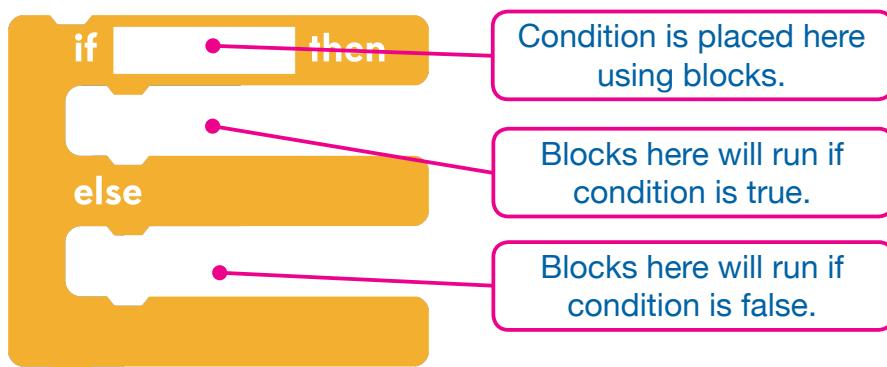


Figure 6.5 Using if then else block

Try This On Machine!

Create an animation in which a cat moves around in a green field which has an electric pole. If it touches the electric pole, it gets electric shock, makes a sound and falls down on the field.

6.3 Events Blocks

Event refers to action that happens as a result of user's input, like mouse click or pressing a key on the keyboard. In Scratch, Events blocks detect user's input and runs blocks that are connected to these blocks.

The functions of some of the Events blocks are as follows:

1.  block is used to run the blocks attached to it when the keys for English alphabet (a to z), number (0 to 9), arrow ($\rightarrow \leftarrow \uparrow \downarrow$), or spacebar are pressed on the keyboard.
2.  block is used to run the blocks attached to it when the Sprite is clicked.

Try This On Machine

Make an animation in which a Sprite starts to move when letter "s" is pressed. The animation should stop when you click on the Sprite.

6.4 Algorithm

Every day we carry out many tasks such as solving mathematics problems, writing essays, washing hands, cooking and so on. Let us think about the procedure involved in washing our hands.

Step 1: Open tap for water.

Step 2: Wet our hands.

Step 3: Apply soap.

Step 4: Rinse our hands.

These step-by-step instructions to solve a problem or to complete a task is known as **algorithm**. Algorithms are in use all around us. Algorithm for simple task like getting dressed up for school involves less number of instructions and are easy to understand. While algorithm for complex task like flying an aeroplane requires more number of instructions that makes it difficult to understand.

Try This

Write an algorithm to brush your teeth. Compare your algorithm with your friend's algorithm and write down the similarities and differences.

In programming, computer programmers write algorithms to instruct the computer how to perform a given task. Let us have a look at how to write an algorithm to draw a square in Scratch.

Table 6.2 Writing algorithm to draw a Square

Algorithm	Program
<p>Step 1: Take the pen.</p> <p>Step 2: Move 50 steps to draw first side.</p> <p>Step 3: Turn 90 degrees counter clockwise.</p> <p>Step 4: Move 50 steps to draw second side.</p> <p>Step 5: Turn 90 degrees counter clockwise.</p> <p>Step 6: Move 50 steps to draw third side.</p> <p>Step 7: Turn 90 degrees counter clockwise.</p> <p>Step 8: Move 50 steps to draw fourth side.</p> <p>Step 9: Stop drawing.</p>	<pre> pen down move (50) steps turn (90) degrees move (50) steps turn (90) degrees move (50) steps turn (90) degrees move (50) steps pen up </pre>

Try This

Write an algorithm to make a cat draw a triangle with different coloured sides in Scratch. Write the script for your algorithm in Scratch.

Now You Know

1. Pen blocks are used to draw shapes in different sizes.
2. Pen block can be used to stamp Sprite's image on the stage.
3. Sprite can sense if it is touching a colour, other Sprites or edge of the Stage.
4. Script can be repeatedly run by using repeat and forever blocks.
5. If-then block helps Sprite to make a decision depending on a condition.
6. Listing of steps to do a task or solve a problem is called algorithm.
7. Sprite can draw in different colours using Pen blocks.

Check Your Progress

1. Write TRUE or FALSE against each statement given below:
 - (a) Stamp block creates a copy of a Sprite on the Backdrop.
 - (b) Forever block runs the Script only if the condition is true.
 - (c) Clicking on a Sprite on the stage is an event.
 - (d) A repeat block allows you to specify exactly how many times blocks should run.
 - (e) Sensing blocks are used as conditions to make decision in an animation.

2. Fill in the blanks with appropriate words.
 - (a) Step-by-step direction or procedure to do a task is called
.....
 - (b) In order to run the blocks within if-then block, must be true.
3. Answer the following questions:
 - (a) Differentiate between Sensing and Events blocks.
 - (b) Explain the use of Wait block in an animation.
 - (c) Write an algorithm and a script to generate the following pattern in Scratch.



- (d) Rearrange the following steps to form an algorithm to find the area of a rectangle.
 - (i) Multiply length and breadth of a rectangle to find the area.
 - (ii) Get the scale and pencil.
 - (iii) Measure the length of rectangle.
 - (iv) Write the area.
 - (v) Measure the breadth of rectangle.

Explore Further

1. Draw a square and an equilateral triangle using a combination of turn, move and control blocks. You are allowed to turn only 30 degrees at a time.
2. Make Cat move in the direction of arrow key pressed. Cat must face left while moving toward left or face right while moving towards right direction.

Weblinks

1. Introduction to algorithms

- 📎 http://en.wikibooks.org/wiki/Wikijunior:Programming_for_Kids/Writing_Your_Algorithms

2. Example of algorithm

- 📎 <http://stigstud.files.wordpress.com/2010/02/algorithms-student-notes.pdf>

3. Loops in Scratch:

- 📎 <http://www.multiwingspan.co.uk/scratch.php?page=iteration>

4. Conditions in Scratch:

- 📎 <http://www.multiwingspan.co.uk/scratch.php?page=selection>

5. Events in Scratch:

- 📎 <http://cs.harvard.edu/malan/scratch/events.php>

END OF THE YEAR ACTIVITY

This activity can be spread over multiple periods. Students need not complete it in one sitting like a regular class test or an examination.

Key Skills

1. Typing in Dzongkha.
2. File and folder management
3. Finding information on the Internet
4. Text editing and formatting in Word
5. Modifying Sprite behaviour and properties in Scratch

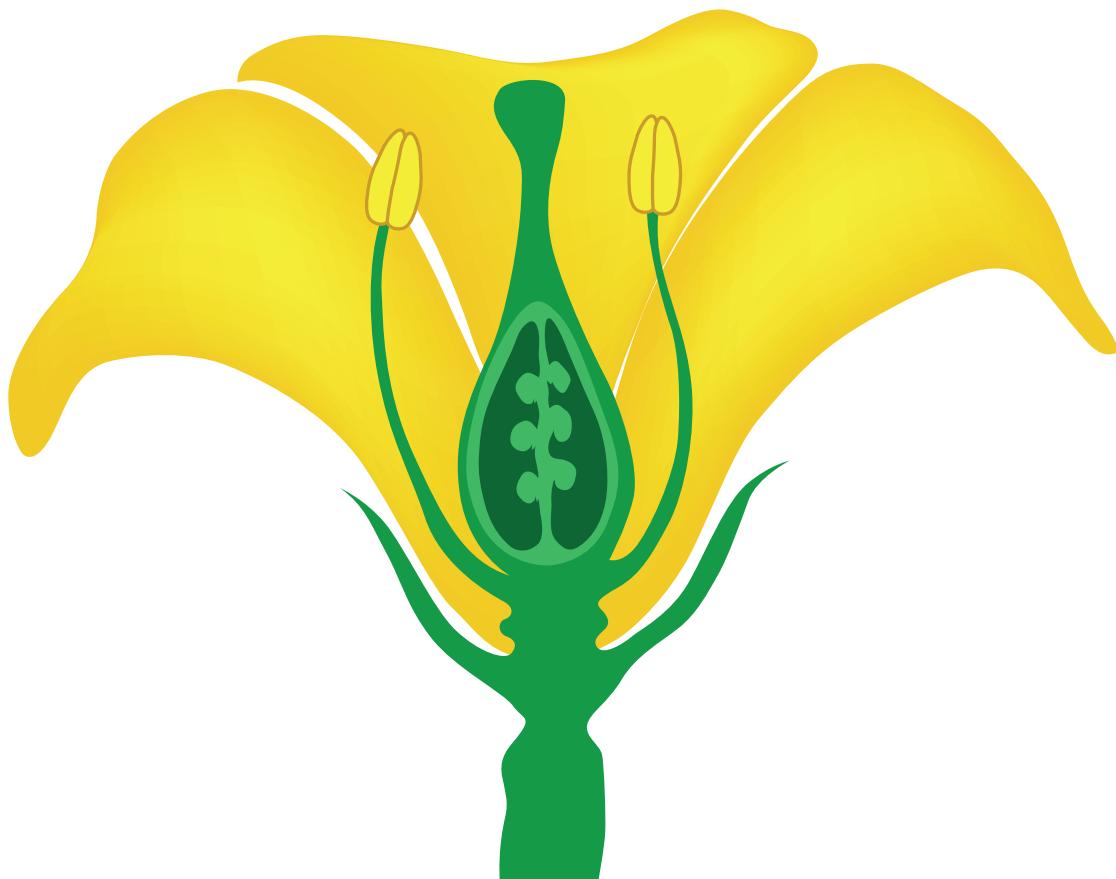
Task

Refer the picture and complete the following tasks.

Source: Science Class V Page 110

- ① From the Internet, find out more about the terms shown in the picture.
- ② Edit, format and organise your information in Word document. Save the document.
- ③ Create an animation in which a bee flies towards the flower. When the bee touches the anther of the flower, the flower should change its colour and says "Ala Wai!". The bee should then fly away from the flower. Save the animation.

- ④ Write a story of your animation in Dzongkha in Word. Save the story.
- ⑤ Save all three files in a new folder on the Desktop. Write your name as the folder name. If you have completed your project, send your folder to your teacher as an attachment through LAN messenger.



ASSESSMENT CHECKLIST

Name of the student :

Roll No. Class : Section :

School :

Tick (/) under the appropriate column 1, 2 or 3 against each core competency statement. The numbers, as described below, indicate the competency level of a student in each of the stated skills:

1 = Some of the time 2 = Most of the time 3 = All the time

For Explore Further activity, use tick (/) or cross (x) to show whether the student was able to successfully do it or not.

Chapter 1		Degree		
Sl. No.	Competency / Proficiency	1	2	3
1	Describes the functions of computer components and its peripheral devices.			
2	Categorizes devices into input and output devices.			
3	Demonstrates an understanding of computer working principle (I-P-O cycle).			
Sub Total A				
Explore Further				
a	Identifies and name additional input, output and storage devices used in computer.			

Chapter 2

Sl. No.	Competency / Proficiency	Degree		
		1	2	3
4	Creates, re-drafts and presents ideas using text editing features (text manipulation, laying out text, checking for errors and correcting them).			
5	Types in Dzongkha using word processor (key boarding skill).			
Sub Total B				
Explore Further				
a	Demonstrates high degree of text formatting skills.			
b	Demonstrates high degree of Dzongkha typing skills.			

Chapter 3

Sl. No.	Competency / Proficiency	Degree		
		1	2	3
6	Uses basic file management techniques.			
7	Makes their login password secure.			
8	Explains the importance of using strong and secure password.			
Sub Total C				
Explore Further				
a	Identifies ways to recover the deleted file or folder.			
b	Explains additional areas where passwords are used.			
c	Demonstrates ability to change user account password.			

Chapter 4

Sl. No.	Competency / Proficiency	Degree		
		1	2	3
9	Finds information using search engines.			
10	Communicates using a LAN messenger.			
Sub Total D				

Explore Further		
a	Uses LAN messenger to collaborate on a topic.	
b	Saves webpages and uses text and pictures for school work.	

Chapter 5				
Sl. No.	Competency / Proficiency	Degree		
		1	2	3
11	Changes the motion of the object.			
12	Adds sounds and speech to the animation.			
13	Modifies appearance of the object.			
Sub Total E				
Explore Further				
a	Combines motion, sound, speech and appearance in animating an object.			
b	Demonstrates higher degree of understanding in manipulating object properties to achieve desired outcome.			

Chapter 6				
Sl. No.	Competency / Proficiency	Degree		
		1	2	3
14	Creates geometrical shapes by using motion of the object.			
15	Controls appearance and behaviour of objects using conditions.			
16	Uses algorithms to solve problems.			
Sub Total F				
Explore Further				
a	Applies algorithmic thinking in drawing regular geometrical figures.			
b	Uses keyboard arrows to control Sprite.			

Total A = Sub Totals A + B + C + D + E + F =

End of the Year Activity

Sl. No.	Competency	Degree		
		1	2	3
1	Information searched from the Internet. (Assesses the student's ability to search for the required information).			
2	Information properly edited and formatted in Word. (Assesses the student's proficiency to edit and format a document).			
3	Animating a bee flying towards and away from the flower. (Assesses the student's competency to change Sprite appearance and use event and repetition blocks).			
4	Story written in Word document. (Assesses the student's ability to type in Dzongkha).			
5	Files organized in a folder. (Assesses the student's ability to organise files and folders in a location).			
Total B				

Total points scored = Total A + Total B =

$$\text{Score} = \frac{\text{Total points obtained}}{\text{Number of checklist items} \times 3} \times 100 \%$$

Grade =

Note: Refer the table on page 93 to award grade.

ASSESSMENT PLAN

The achievement of learning objectives will be the focus of assessment for this course. This will include essential ICT knowledge, skills, values and computational thinking practices. This assessment comprises two parts: the **through-course assessment** and the **year end assessment**, which will be examined through **observations, conversations and portfolios**.

The through-course assessment tasks consist of **Try This, Try This on Machine** and **Check Your Progress** which are designed to gather evidences of student proficiency in specific skills defined in the learning objectives.

The year end assessment requires students to apply the key skills they have acquired over the year in a holistic way. This is a project based assessment spanning over several periods. Sample project is included in the book but teachers may choose to create their own projects, modelled on the sample. Students should also be encouraged to come up with their own projects. Teachers should ensure that key skills learnt during the course are clearly identified and applied in the projects.

In doing the assessment, teachers should focus on observing and discussing how:

- » students carry out ICT supported learning.
- » students collaborate with peers, and seek support from parents and teachers.

- » students are progressing in their learning on the basis of work they are doing or have completed.

They should be given ample support and feedback to develop their competency in the key skills before they are assessed. This is to ensure that the nature of assessment is mostly formative as envisioned for this curriculum.

Assessments are done through checklists based on the learning objectives. Student's competency will be graded in a scale of 1 to 3. Grades should be given after careful evaluation of how consistently the student has demonstrated the required competency.

The overall competency of a student is determined on the basis of the cumulative score of through-course assessments and the year end assessment. Based on the student's score, a grade from A to D will be awarded as per the table given below:

Score	Grade	Description
>= 80%	A	Student is an expert in this area. He/She can provide guidance, troubleshoot and answer questions related to this area where the skill is used.
> 80% < 60%	B	Student can perform the actions associated with this skill without assistance. He/She is certainly recognized amongst the peers as "a person to ask" when difficult questions arise regarding this skill. He/She might require help from the teacher once in a while.
< 60% > 40%	C	Student is able to successfully complete tasks in this competency as requested. He/She will require help from the teacher time to time, but he/she can usually perform the skill independently.
< 40%	D	Student have basic knowledge and understanding from experience gained in a classroom. He/She is expected to need help when performing this skill.

Assessing Student Performance

Assessment is an integral part of teaching and learning. Teachers and schools are expected to conduct assessment to provide information about student's learning to the learner, the teacher and the parent.

Assessment is broadly of two types: formative assessment and summative assessment. Assessment primarily carried out to help students to learn is usually called formative assessment or assessment for learning. It takes place continually as students are learning. Assessment which is primarily for other purposes is often called summative assessment or assessment of learning. It usually comes at the end of learning.

The table below shows how assessment is used for variety of audiences and purposes.

Assessment OF Learning	Assessment FOR Learning
<ul style="list-style-type: none"> - To monitor national standards. - To report on achievement to students themselves and parents. - To make teachers, administrators and politicians accountable. - To screen students for higher studies and employment. - To determine what courses students should take in school or university. 	<ul style="list-style-type: none"> - To help students to learn by diagnosing difficulties. - To support students to learn by providing feedback.

The distinction between summative and formative assessment can be confusing. After all, the results of assessment can often be used for both the purposes. When the results of assessment are used to evaluate student performance, it is called summative assessment. When the results of assessment are used to improve student performance, it is called formative assessment.

Assessment requires a variety of data-gathering methods, including observations, interviews, performances, and collections of student work.

Literacy with ICT looks at assessment through three lenses: observation,

portfolio, and conversation.

Observations

By observing learners as they engage in using ICT, teachers determine which behaviours students have demonstrated and those they are still working towards. This information helps teachers plan for instruction that will further develop student's literacy with ICT.

Observation can be either direct or indirect. Direct observation is when you watch interactions, processes or behaviour as they occur, such as teacher watching student explore the Internet to find specific information. The teacher may focus on the student's ability choose the right tool and the relevancy of the information retrieved.

Indirect observations are when you watch the result of interaction, process or behaviour. For example, teacher can inspect the cleanliness of the computer lab to determine whether the students are following the lab rules.

Effective observation involves proper planning to determine the focus of observation. For example, in order to know how well your student applied the strategy while playing logical games, the focus should be on looking at the time taken to complete the game.

Teachers could use checklist, recording sheet and field notes to help them observe student's progress in use of ICT.

Conversations

Assessing literacy with ICT involves setting learning goals, building criteria and giving and getting feedback. These conversations may be shared between students, between teacher and student or be self-reflective. They may also be student-led conferences involving parents. This type of conversation is an important part of reporting to you about your child's literacy with ICT.

An effective conversation provides an opinion concerning the strengths and

weaknesses of the student. The result may be then used to plan and design future learning programs.

Conversation may start with simple question of what their plan, quality of the work done and the results they achieved.

Portfolios

As they learn, students use portfolios to accumulate evidence of their literacy with ICT. These portfolios may be process or product portfolios, or a combination of the two. They may be paper-based or electronic. The electronic portfolio or e-portfolio may include images, audio, PowerPoint slides of the project, animation, video or a simple reflection. It can be used by teacher, parents and students themselves to document what they are doing (either day-to-day things or through their best work or improvements they've made).

Involving student actively in the portfolio process develops self-awareness, goal-setting, and decision-making skills essential for lifelong learning. They integrate diverse experiences in their portfolio over time and assess their own progress based on evidence and criteria, thus fostering the sense of responsibility and ownership of their own learning.

Students can organize their portfolios, as blogs, reflections on wiki, discussion on forum, and podcasting and vodcasting their works.

Focus on Proficiency

Assessment in this curriculum is based on holistic assessment of ICT skills and knowledge. Component skills would not be isolated and individually assessed. Doing so places strong emphasis on ICT literacy. Instead, a checklist would be developed which will define children's levels of performance or proficiency in each of the intended learning outcomes. It is hoped this will provide a good overview of children's area of strengths and weaknesses to plan for future learning.

