TOUCHPAD

Ver. 4.0

6

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Periods / Days	0	I	II	III	IV		V	VI	VII	VIII
Monday						B				
Tuesday						R				
Wednesday						E				
Thursday						A				
Friday						K				
Saturday										

Development Milestones in a Child

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.

Age
5 - 8 Years

Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/ Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/ Social	• Self-esteem tends to rise • Peer groups emerge
Age 11 - 20 Years	
Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/ Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

"Family is the most important thing in the world."

Teaching Pedagogies

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

During the class

Present the lesson plan.

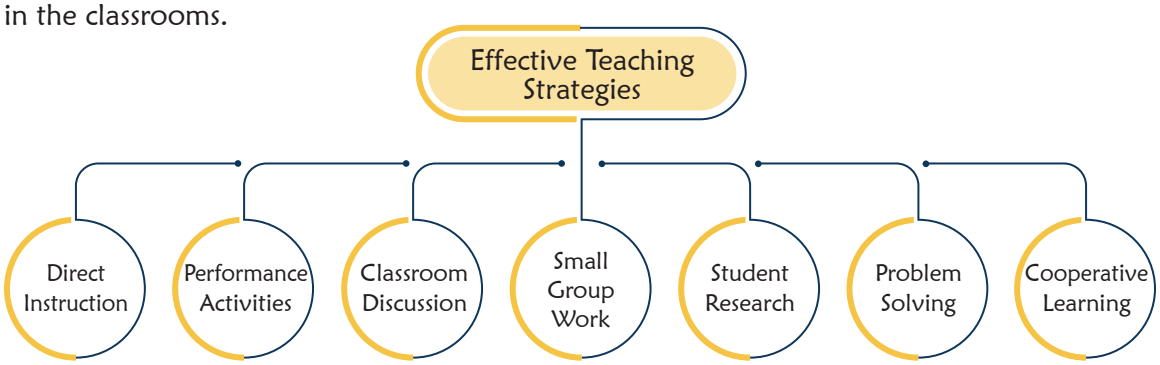
After the class

Reflect on what worked well and why. If needed, revise the lesson plan.

"Knowing yourself is the beginning of all wisdom."

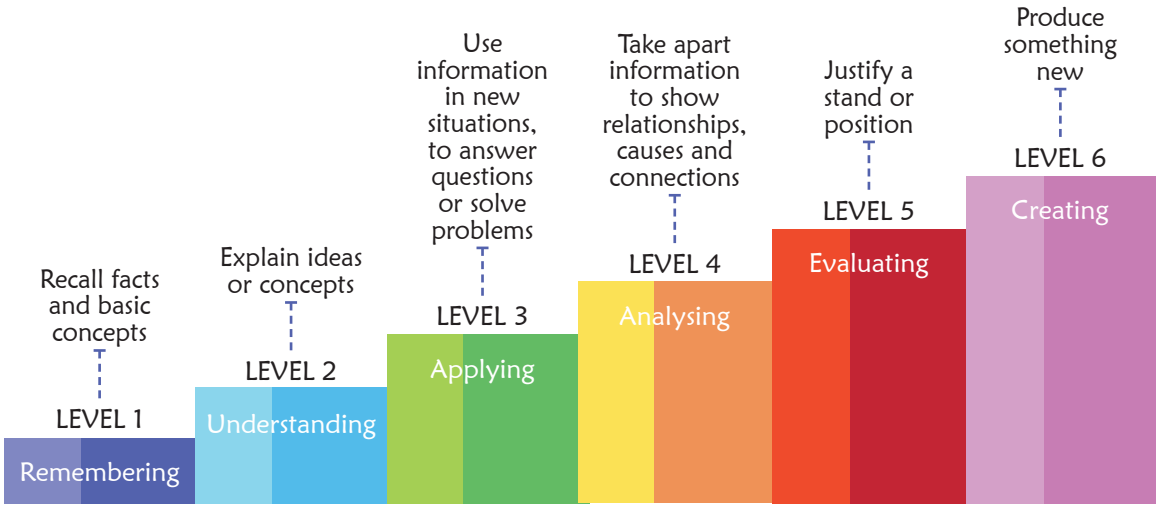
Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



Bloom's Taxonomy

Bloom's Taxonomy was created by Dr Benjamin Bloom and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

> "If you have no confidence in self, you are twice defeated in the race of life."

CLASS 6

LESSON PLAN

1 Categories of Computers

Teaching Objectives

Students will learn about

- Computer Categories
- Some other Special Computers

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a computer is an electronic device that performs diverse operations with the help of instructions to process the data in order to achieve desired results.

Tell the students that computers are categorised on the basis of:

- Type
- Speed
- Price
- Size
- Processing power

Make them understand these categories in details with examples.

Tell the students that on the basis of functions, computers are further divided into three categories: **Analog Computer**, **Digital Computer** and **Hybrid Computer** with examples.

Explain the students that according to size, speed, processing power and cost, computers are further divided into categories.

Tell the students about the type of computers with examples:

- Explain **Microcomputer** and examples like Desktop computer, Laptop and Tablet.
- Explain **Minicomputer** with examples.
- Explain **Mainframe Computer** with example.
- Explain **Supercomputer** with examples.

Make them understand that there are some other special computers:

- Teach them about **Embedded Computers** which are further divided into Digital Camera, ATM and Microwave, etc.

- Also, teach them about **Handheld Computers** which are further divided into Smartphone, PDA, Smartwatch, Gaming Consoles, etc.

Ensure that the scope of the **Teacher's Corner** given at the end of the chapter has been covered.

Ask the students to read the **Clickipedia** given on page 9.

Extension

Ask the students some oral questions based on this chapter.

Q. What is an analog computer?

Q. What is a digital computer?

Q. What is a hybrid computer?

Q. What is a microcomputer?

Q. What is a minicomputer?

Q. What are mainframe computers?

Q. What are supercomputers?

Q. Define embedded computers.

Q. What is the full-form of PDA?

Q. What is the full-form of ATM?

Encourage the students to walk through the chapter and ask them to explain any one topic from the chapter.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 11 to 13 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in **In the Lab** section on Page 13 in the main course book. This will enhance the abilities of the students and serve as a Technology Literacy and Creativity activity.

Suggested Activity

Ask the students to search for some other special computers and write about them in a Word file.

2 Windows 10

Teaching Objectives

Students will learn about

- Windows Media Player
- Using Pictures Folder
- Using Removable Storage Devices
- Features of Windows 10

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that Windows 10 is an operating system.

Tell the students about Windows Media Player and how to use it.

Explain the students about using the removable storage devices along with the steps involved in using a pen drive.

Share with the students how to use pictures folder and steps involved in using it.

Introduce the students with the features of Window 10:

- Sneak
- Snap
- Jump List

Also share the steps involved in using these features easily.

Ensure that the scope of the **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Name the application software which comes in-built with Windows 10.

Q. What is the use of these features of Windows 10?

- Sneak
- Snap
- Jump list

Q. What is Windows Media Player?

Q. Why we use removable storage devices?

Q. What is the purpose of using pictures folder?

Encourage the students to walk through the chapter and ask them to explain any one topic from the chapter.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 17 to 19 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in **In the Lab** section on Page 19 in the main course book. This will enhance the abilities of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to collect information from the Internet about earlier versions of Windows like Windows XP and Windows Vista. Tell them to make a comparative table about the various features available in these earlier versions and Windows 10.

3 Introduction to PowerPoint 2019

Teaching Objectives

Students will learn about

- Starting PowerPoint
- Creating a New Presentation
- Using Built-in Templates
- Saving a Presentation
- Components of PowerPoint Window
- Entering Data on the Slide
- Slide Views
- Opening a Saved Presentation

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that Microsoft PowerPoint is a part of Microsoft Office package.

Share with the students that it is used to create presentations.

Demonstrate to the students the steps to start PowerPoint 2019.

Familiarise the students with various components of PowerPoint Window covering Title Bar, Ribbon, Quick Access Toolbar, File Tab, Slide, Placeholder, Slides / Outline Pane and Status Bar.

Demonstrate the steps to:

- Create a new presentation
- Entering data on the slide

Demonstrate to the students the steps to use Built-in templates.

Introduce Slide views and different options of slide views.

Explain different options and demonstrate the steps involved in:

- Normal View
- Notes Page View
- Outline View
- Slide Sorter View
- Reading View
- Slide Show View

Tell the students how to:

- Save a presentation
- Opening a saved Presentation

Ensure that the scope of the **Teacher's Corner** given at the end of the chapter has been covered.

Ask the students to read the **Tech Funda** given on page 26.

Extension

Ask the students some oral questions based on this chapter.

Q. What is PowerPoint 2019?

Q. Define Title Bar.

Q. Define Status Bar.

Q. What do you mean by Ribbon and Placeholder?

Q. Which key is pressed to delete a selected placeholder?

Q. What are the various ways in which a slide show can be started?

Encourage the students to walk through the chapter and ask them to explain any one topic from the chapter.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 28 to 30 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in **In the Lab** section on Page 30 in the main course book. This will enhance the abilities of the students and serve as a Technology Literacy and Creativity activity.

Suggested Activity

Ask the students to create a presentation on 'The Cartoon Character I Like The Most'.

4 Working with PowerPoint

Teaching Objectives

Students will learn about

- Slide Layout
- Inserting a Picture
- Moving an Object
- Applying Shadow Effect
- Inserting WordArt
- Inserting SmartArt
- Rotating Objects
- Arranging Slides in Slide Sorter View

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that Microsoft PowerPoint is a program that allows creating interesting and exciting presentations.

Introduce slide layout as arrangement of text, image, charts, etc. on a particular slide.

Share with the students the names of some commonly used slide layout options.

Demonstrate to the students the steps involved in changing the slide layout.

Introduce WordArt as it allows to create text effects that are not available through font formatting.

Demonstrate the steps involved to add WordArt to a slide.

Show to the students the steps involved in inserting a Picture from folder and inserting an Online picture.

Introduce SmartArt as a diagrammatic representation of some information. Tell the students about different types of SmartArt diagrams and the situations when each of them is used.

Introduce the term Moving an Object which means to move an object from one place to another on the same slide or within the slides,

Demonstrate the steps involved to move an object.

Explain Rotating Objects as PowerPoint allows to rotate a shape, text and picture in clockwise or anticlockwise direction.

Tell the students the steps involved to rotate an object.

Share with the students that PowerPoint allows to apply different types of shadow effects on shapes and demonstrate the steps involved to add shadow effect.

Explain the students that PowerPoint allows to change the position of slides by using the Slide Sorter View.

Tell the students the steps involved in arranging slides in Slide Sorter View.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Define slide layout.

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

Q. When is List / Process / Hierarchy / Matrix SmartArt used?

Q. When is Normal / Outline / Slide Sorter / Reading View used?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 36 to 38 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 38 of the main course book will enhance the ability of the students and serve as a Technology Literacy and Creativity activity.

Suggested Activity

Create a MS PowerPoint presentation on the topic "Are we conserving natural resources?". Use pictures to increase the effectiveness of the presentation.

5 Enhancing A Presentation

Teaching Objectives

Students will learn about

- Applying Themes
- Tables in PowerPoint
- Working with Slide Master
- Specifying Alignment
- Using Charts in PowerPoint

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that Microsoft PowerPoint is a presentation software used to create slides.

Tell the students that a theme is a set of predefined layouts that can be used to add a professional touch to the presentations.

Demonstrate the steps to choose a theme, change theme colours, fonts and backgrounds.

Tell the students that Alignment helps to align the text of the slide in various directions.

Explain the four types of alignment in the presentation and demonstrate the steps involved to align the text.

Tell the students that a table is an arrangement of text in the form of columns and rows.

Explain the steps involved in:

- Inserting a Table
- Entering Data in a table
- Applying Table style
- Inserting Table using Insert Table option
- Formatting Table

Show the different components of a chart.

Familiarise the students with the different types of chart options available.

Demonstrate the steps of:

- Creating a chart
- Modifying a chart by changing its type, layout and design.

Introduce students with Slide Master and the steps involved in using this action into a presentation.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Define slide layout.

Q. How to add a table in PowerPoint?

Q. How to add a chart in PowerPoint?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 52 to 54 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 54 of the main course book will enhance the ability of the students and serve as a Technology Literacy and Creativity activity.

Suggested Activity

Divide the class into two teams. Ask one team to prepare charts on various types of pollution. Ask the other team to prepare a PowerPoint presentation on the same topic. Make the students share the benefits enjoyed and limitations faced by each team while working on their project.

6 Advanced Features of PowerPoint 2019

Teaching Objectives

Students will learn about

- Slide Transition
- Media Clips
- Importing Data from Other Applications
- Animation
- Adding Action Button

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that PowerPoint 2019 is used to create electronic presentations.

Explain to the students that transitions are used to determine how the presentation moves from one slide to the next.

Tell the students about the various categories of slide transitions available in PowerPoint.

Demonstrate the application of transitions to slides in a presentation.

Introduce animation as the feature that gives a moving effect to text and other objects on the slide.

Show to the students the steps involved in applying animation to various objects on a slide.

Tell the students the animation effects applied to different objects on a slide can be reordered.

Explain the students that media files such as video and audio enhance the understanding of a presentation.

Demonstrate the steps involved in adding a video file and adding sound.

Tell the students that Action buttons helps other people using our presentation in navigating from one slide to another.

Share the steps involved in adding action button with the students.

Explain to the students that PowerPoint 2019 allows to import and use the files or objects created in Microsoft office applications.

Demonstrate the steps involved to import data.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What type of audio files can be inserted into a presentation?

Q. Can we add video files on a slide?

Q. Define transition.

Q. How many transitions can be applied to a slide?

Q. What happens if more than one slide transitions are added to a slide?

Q. What is meant by animation in MS PowerPoint?

Q. Can we reorder the animations applied to different objects on a slide?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 62 to 64 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 64 of the main course book will enhance the ability of the students and serve as a Technology Literacy and Creativity activity.

Suggested Activity

Ask the students to create an interactive story presentation.

7 Internet and E-mail

Teaching Objectives

Students will learn about

- The Internet
- How does the web work?
- Using URLs
- Emoticons and Acronyms
- World Wide Web
- Using web browser
- E-mail

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that the internet is a computer network that connects hosts and end systems throughout the world.

Give a brief history of the beginning of internet as ARPANET.

Introduce the concept of World Wide Web (WWW) with reference to basic terms covering web, web servers, posting/uploading, etc.

Explain to the students the process of how the web works.

Introduce web browser as software application designed to find hypertext documents on the web.

Show to the students the steps involved in the process of launching the web browser.

Tell the students about Uniform Resource Locator or URL (unique internet address) and their use while navigating on internet.

Make the students recall E-mail as the process of exchanging messages electronically through communications network by using a computer.

Share with the students the features, advantages and disadvantages of e-mail.

Explain the components of an e-mail address to the students.

Demonstrate in detail the steps involved in:

- Creating an e-mail account
- Composing an e-mail
- Sending an e-mail (with reference to fields like To, Cc, Bcc and Subject)
- Attaching files to an e-mail
- Reading a received e-mail
- Logging In to an e-mail
- Logout from the e-mail account (tell them the importance of this step)

Introduce the terms emoticons (representation of facial expressions) and acronyms (word formed from initial letters of a multi-word name).

Write some commonly used emoticons and acronyms on the class board to elaborate the concept.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is World Wide Web?

Q. Define web server.

Q. How the web works?

Q. Expand URL.

Q. Define an e-mail.

Q. What do you understand by emoticons?

Q. What is an acronym?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 76 to 78 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 78 of the main course book will enhance the ability of the students and serve as a Media Literacy and Technology Literacy activity.

Suggested Activity

Ask the students to create an e-mail account. Send a birthday invitation to ten friends and/or relatives.

8 Introduction to Programming

Teaching Objectives

Students will learn about

- Computer Languages
- Python
- Installing Python
- Input and Output
- Data Types
- Operators
- Some More Programs
- Language Translator
- Features of Python
- Programming in Python
- Variables in Python
- Comments in Python
- Precedence of Operators

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students about how humans communicate and their language. Also give an introduction of problem solving techniques, algorithm, flowchart, etc.

- **Program** – a set of instructions given to CPU in a pre-defined sequence to complete a task.
- **Computer language** – means by which data and instructions are transmitted to the computer.
- **Syntax** – the grammar of a computer language.
- **Programming** – process of writing a program.
- **Programmers** – people who write computer programs.

Tell the students that computer languages are categorised as low-level languages (machine dependent) and high level languages (machine independent).

Share with the students that low level languages are further classified as machine language (first generation language made up of 0s and 1s) and assembly language (second generation language made up of alphanumeric symbols).

Make the students learn that the high level languages are further classified as third generation languages (examples: **BASIC**, **C**, **FORTRAN**, **PASCAL**, etc.), fourth generation languages (examples: **Perl**, **SQL**, **Python**, etc.) and natural language or fifth generation languages (involving artificial intelligence).

Tell the students the advantages and disadvantages of high level languages over low level languages.

Introduce the concept of language translators as software that convert a high level language into a machine language covering:

- Assembler – used to translate assembly language into machine language.
- Compiler – used to convert source program at once into machine language before executing it.
- Interpreter – used to convert source program one line at a time into machine language before executing it.

Tell the students that Python is a popular high-level programming language and it is a powerful language used for general-purpose programming.

Introduce the students with Python and its features.

Share with the students the features of Python briefly that it is:

- Easy to code
- Object-oriented
- Interpreted language
- Open-source language
- Integrated and Extensible language
- Dynamically Typed language

Demonstrate the students the steps to install Python.

Tell the students that Programming in Python have two basic modes:

- Script Mode
- Interactive Mode

Show to the students the components of Python window.

Share with the students the working in Script mode and demonstrate the steps involved in the four step process, i.e.,

- Creating a new file
- Saving Python program
- Writing a program
- Running a Python program

Explain to the students the Input and Output functions in a Python program with syntax and pictures.

Tell the students the Variables in Python along with the declaring and initialising a variable with syntax.

Explain to the students the Data Types and Comments in Python with syntax.

Show the students the proper use of Single Line and Multiple-line comment in Python.

Explain to the students about Operators in Python and its types along with the syntax and description of that are:

- Arithmetic Operators
- Assignment Operators
- Logical Operators
- Relational Operators

Tell the students about the Precedence of Operators with the help of sample programs in Python.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What are computer languages?

Q. What is Low-Level language?

Q. What is High-Level language?

Q. Give examples of each:

a. Machine Language

b. Assembly Language

c. Third Generation Language

d. Fourth Generation Language

e. Fifth Generation Language

Q. What are advantages of HLL?

Q. What are disadvantages of HLL?

Q. What is a language translator?

Q. What is an assembler?

Q. What is the difference between a compiler and an interpreter?

Q. Explain the working of language translators.

Q. What is Python?

Q. What are features of Python?

Q. What are the steps to install Python?

Q. What are the two modes of programming in Python?

Q. What is the purpose of input() function?

Q. What is the purpose of print() function?

Q. What are variables in Python?

Q. What are comments in Python?

Q. What are operators in Python?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 95 to 97 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 98 of the main course book will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to collect more information about the computer languages and translators.