TOUCHPAD

PLUS Ver. 3.2

6

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Periods / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
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."

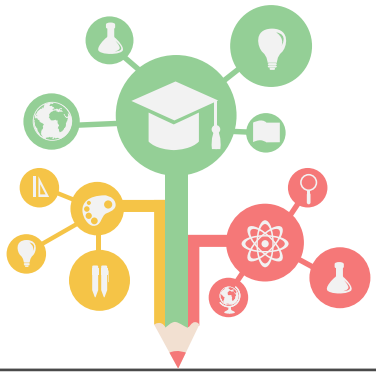
Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/ 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.

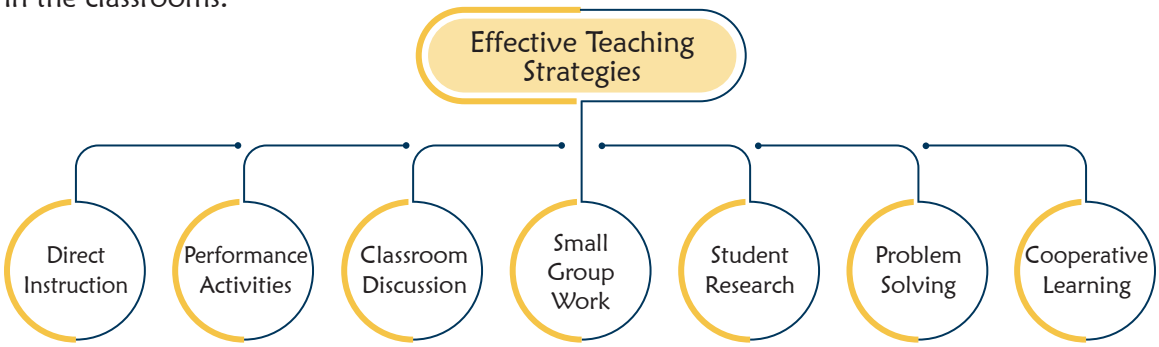
After the class

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

"Knowing yourself is the beginning of all wisdom."

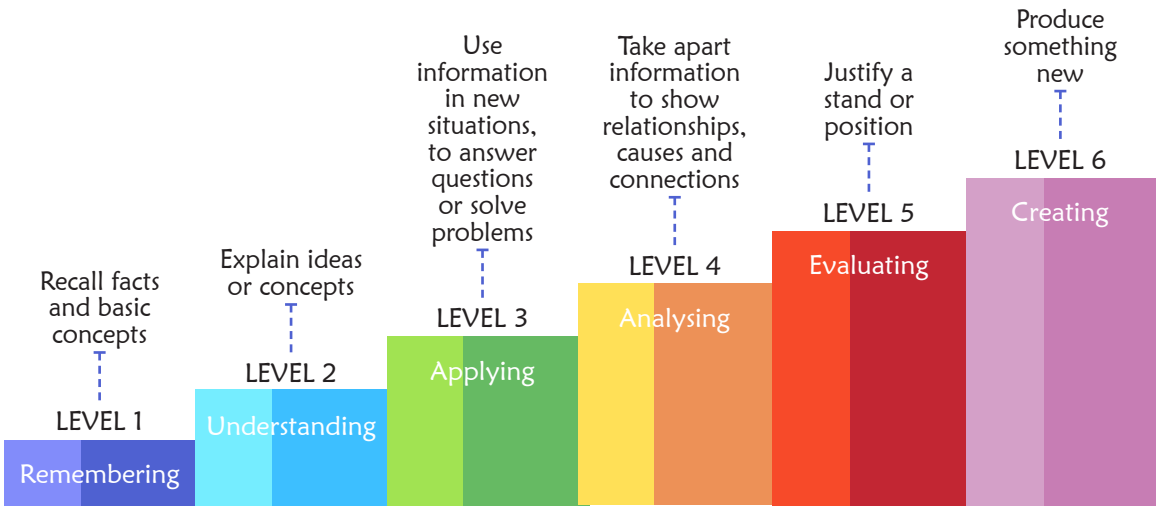
Teaching Strategies

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 Advanced Features of Ubuntu

Teaching Objectives

Students will learn about

- Ubuntu Features
- Date and Time Settings
- Mouse & Touchpad Settings
- Sound Settings
- Components of an Open Application Window
- Settings
- Dock Settings

Number of Periods	
Theory	Practical
3	1

Teaching Plan

While teaching this chapter, tell the students that an operating system manages computer functions, with Ubuntu variants like Lubuntu and Kubuntu and Xubuntu.

Tell the students about some Ubuntu features:

- Sneak
- Aero Flip
- Snap

Tell the students about Settings and steps involved in using the feature of it.

Share with the students about steps involved in using the feature of Time and Date setting and how to modify it.

Show the students about dock settings and steps involved in using this feature.

Explain to the students how to change Mouse and touchpad setting and steps involved in using it.

Demonstrate the students about the Sound settings and steps involved in modifying.

Show the students about the components of an open application window:

Title bar, Control buttons, Menu bar, Toolbar, Work area, Scroll bars (Vertical and Horizontal), Border and Status bar.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is a settings application?

Q. How can you change date and time?

Q. How can you change a mouse's settings?

Q. What are the steps to change the sound setting?

Q. What is a dock?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 13 to 15 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 15 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 15 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to use the date and time settings. Also ask them to use dock to change settings.

2 More on LibreOffice Impress

Teaching Objectives

Students will learn about

- Using Templates
- Adding Video
- Animation
- Adding Audio
- Slide Transition
- Running a Slide Show

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that LibreOffice Impress is used to create electronic presentations. 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 template and use it.

Show to the students how to add Audio and the steps involved in adding it into a presentation.

Tell the students how to add video and the steps involved in adding it into a presentation.

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 LibreOffice Impress.

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 custom animation to various objects on a slide.

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

Share with the students that running a presentation is called Slide Show.

Demonstrate to the students the various steps involved in running a slide show

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is a template?

Q. What is an Animation?

Q. What is a Transition?

Q. How to add animation in a slide?

Q. How to add transition in a presentation?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 22 and 23 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 23 and 24 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 24 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy and Creativity activity.

Suggested Activity

1. Divide the class into two teams. Ask one team to prepare charts on various types of pollution.
2. Ask the other team to prepare a presentation on the same topic. Make the students share the benefits enjoyed and limitations faced by each team while working on their project.
3. Divide the class into two teams. Ask one team to prepare presentation on different planets of the solar system. Use appropriate animation and transition effects.

3 More on Writer

Teaching Objectives

Students will learn about

- Find and Replace
- Page Margin
- Watermark
- Inserting Mathematical Equations
- Line Spacing and Paragraph Spacing
- Page Orientation
- Header and Footer
- Mail Merge

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that formatting refers to the appearance of a document.

Tell the students that a particular word or phrase in a document can be looked for with the help of Find feature.

Tell them that Writer can go one step ahead and can replace that particular word or phrase by another word or phrase as required by the user using the Replace feature.

Demonstrate the steps to use Find and Replace features.

Explain to the students that line spacing means the blank space between two lines in a paragraph.

Further tell them that the paragraph spacing means the blank space between two consecutive paragraphs in a document.

Tell the students that page margin is the white space all around the printed area of the paper.

Make the students understand how they can modify page margin settings for their document.

Introduce to the students the concept of orientation as the side of the paper along which the content of the document will be printed.

Tell the students about different types of orientations.

Show them the steps involved in changing the page orientation in a document.

Explain the students how to insert and format:

- **Watermark**
- **Header and Footer**
- **Mathematical Equations**

Also show the steps involved in adding the same in a document.

Introduce to the students Mail Merge as the feature used to create personalized letters to be sent to many persons.

Tell them the various steps involved in creating a mail merge.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is the difference between Find and Replace features?

Q. What is the meaning of Line Spacing?

Q. What is the meaning of Paragraph Spacing?

Q. What do you mean by page orientation?

Q. What do you mean by Mail Merge?

Q. How is mail merge helpful?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 36 to 38 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 38 and 39 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Hands-On and Lab Session section on Page 39 in the main course book. This will enhance the ability of the students and serve as a Creativity and Technology Literacy activity.

Suggested Activity

Ask the students to create an electronic invitation (personalized) for inviting middle school teachers to a thank you performance organized by Grade 6-8 students.

4 More on LibreOffice Calc

Teaching Objectives

Students will learn about

- Starting LibreOffice Calc
- Creating a New Workbook
- Modifying Data
- Inserting Rows/Columns
- Splitting Cells
- Customise Worksheet Tab
- Components of LibreOffice Calc
- Entering Data in a Worksheet
- Column Width and Row Height
- Merging Cells
- Formatting Spreadsheets
- AutoFill

Number of Periods	
Theory	Practical
3	2

Teaching Plan

While teaching this chapter, tell the students that LibreOffice Calc is an application software that helps us to store and analyse data.

Tell the student steps to start lebreOffice calc.

Familiarize the students with the various components of LibreOffice Calc window covering:

Title Bar, Menu Bar, Toolbar, Formula Bar, Name Box, Worksheet, Status bar, Row, Column, Row and Column heading buttons, Cell, Active cell, Worksheet tab, Worksheet tab scrolling buttons, and Workbook.

Demonstrate to the students the steps to:

- **Create a new workbook**
- **Enter data in a worksheet**

Tell the students that to enter data in a cell, simply click on the cell and enter data.

Tell the students the methods of modifying data by cut, copy and paste.

Explain to the students the steps involved in changing row height and column width – both manually and automatically.

Tell the students that Calc allows inserting blank rows and columns at the required place in the worksheet.

Demonstrate to the students how two or more cells can be merged into one and also how a cell can be split up into two or more cells.

Explain some worksheet formatting features of Excel like:

- **Word wrap** – displaying multiple lines of text in a cell.
- **Cell borders** – boundary around a cell or a series of cells.
- **Cell styles** – Pre-defined cell border, colour and formatting.
- **Cell fills** – adding colours or shades in the cells.

Show to the students the steps involved in applying all of these formatting features on a worksheet.

Explain to the students that worksheet tab can be customized by changing its default name and colour.

Introduce to the students AutoFill feature of Excel as automatically filling a series of data in the worksheet and the steps involved in the same.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is LibreOffice Calc?

Q. What are the features of LibreOffice Calc?

Q. Name any five components of LibreOffice Calc.

Q. Define Formula Bar / Name Box / Row / Column / Cell / Active Cell / Cell Range.

Q. State the shortcut key to save an Calc worksheet.

Q. What is the difference between Cut and Copy options?

Q. Define merging of cells.

Q. Define splitting of cells.

Q. Name any three number formats available in Calc.

Q. What is meant by border of a cell?

Q. What is the use of AutoFill feature?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 51 and 52 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 53 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 53 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

1. Ask the students to design their class time-table in Excel 2016.
2. Ask the students to prepare a table in this format for their family members.

S.No.	Name	Relation with Me	Date of Birth	Age

5 Introduce to HTML & CSS3

Teaching Objectives

Students will learn about

- HTML
- Tags and Attributes
- Rules for Writing HTML5 Codes
- HTML5 Document Structure
- Creating and Saving an HTML Document

- Introducing CSS3
- Editing and Existing HTML Document

Number of Periods	
Theory	Practical
3	2

Teaching Plan

While teaching this chapter, tell the students that web page is a document that contains text, graphics, videos, audio, and links to other pages.

Share with the students the **HTML** stands for **Hypertext Markup Language**.

Show to them the key features of HTML5.

Introduce HTML5 Tags and Attributes.

Explain the students Rules for writing HTML5 codes.

Make them understand the Structure of the HTML5 document.

Tell the students Creating and Saving an HTML document.

Introduce the student the CSS3.

Demonstrate the Internal style sheet and External style sheet.

Tell the student editing an existing HTML document.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What are the HTML tags?

Q. What is an attribute in HTML?

Q. How do you create a link in HTML?

Q. What's the purpose of the <head> tag?

Q. What's the difference between HTML and CSS files?

Q. What does CSS stand for?

Q. How do you add a new paragraph?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 62 to 64 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 64 and 65 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 65 in the main course book. This will enhance the ability of the students and serve as a Information Literacy and Creativity activity.

Suggested Activity

Create a simple personal webpage with your name, photo, and hobbies using HTML and CSS.

6 Introduction to Tupi 2D

Teaching Objectives

Students will learn about

- Features of Tupi 2D
- Starting Tupi 2D Software
- Creating a New Tupi 2D Project
- Opening an Existing Tupi 2D Project
- Installing TupiTube Desk
- Components of the Tupi 2D Window
- Saving a Project in Tupi 2D
- Exiting Tupi 2D

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, Tell the studnet TupiTube Desk is a free 2D animation software for creating animations and cartoons.

Tell the students about Tupi 2D and features of it.

Show the steps to install TubiTube Desk and start the application.

Explain the components of Tupi 2D window: Menu bar, Toolbar, Toolbox, Workspace, Paint Area Action Toolbar, Modules Tab, Left side bar ,Right bar, Exposure sheet and Expanded panel along with the functions.

Show the students how to create a document in Tupi 2D with labelled steps.

Demonstrate to the students the steps involved to create shapes in Tupi 2D.

Show the students the steps involved in:

- Saving a program
- Opening an existing project
- Exiting Tupi 2D

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is Tupi 2D?

Q. How to create a document in Tupi 2D?

Q. How to save a project in Tupi 2D?

Q. How to open an existing project in Tupi 2D?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 76 and 77 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 77 and 78 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 78 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to create any shape in Tupi 2D using the tools taught in this chapter.

7 Internet Services and Cyber Crime

Teaching Objectives

Students will learn about

- Internet Services
- Netiquettes
- Cyber Threats
- Cyber Security

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that internet is used for a wide variety of services including communication, shopping and banking.

Tell the students that internet services allow us to perform different types of operations over the internet.

Explain how internet plays an important role in communication through e-mails, video conferences, voice-over-internet protocol, chat, social network, newsgroup and blogs.

Demonstrate the steps to use:

- VoIP services

Share with the students how internet is used to:

- Send greetings in the form of e-greetings
- Send and receive money through e-banking
- Store data and information through cloud storage

Tell the student that Netiquette is the set of rules for polite and respectful online communication.

Tell the student cyber threats and it's types.

Introduce the student Cybersecurity protects data and systems from unauthorised access and cyber threats.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Name some internet services.

Q. Define Video Conferencing / VoIP.

Q. Define chatting / social networking.

Q. What is meant by cloud storage?

Q. Name some cloud storage services.

Q. Define Cyber Security / Cyber Crime.

Q. What are the different types of cyber-threats?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 88 to 90 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 90 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 91 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to collect information about different types of major cyber-crimes committed in last one year.

8 Algorithm and Flowchart

Teaching Objectives

Students will learn about

- Algorithm
- Characteristics of a Good Algorithm and Flowcharts
- Uses of an Algorithm
- Writing an Algorithm
- Defining Flowcharts
- Solving Problems using Algorithms and Flowcharts

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students about how humans communicate and their language.

Introduce algorithms as set of steps in a sequential and ordered manner to solve any problem or to complete a task.

Tell the student characteristics of a good algorithm and flowcharts.

Introduce the student uses of an algorithm.

Encourage the students to write algorithms involving some basic tasks like getting ready for school or involving mathematical problems.

Introduce flowcharts as diagrammatic representation of an algorithm.

Explain the shapes and usage of flowchart symbols covering Start / Stop box, Process box, Decision box, Input / Output box, Flow lines and Connectors.

Make the students learn the rules for drawing a flowchart.

Encourage the students to draw flowcharts for the algorithms written earlier.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is an algorithm?

Q. What is a flowchart?

Q. Define the symbols used in a flowchart.

Q. What is the role of start and stop symbol?

Q. What is the role of connectors or flowlines?

Q. What is a decision box?

Q. What is the role of input and output box?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 98 to 100 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 100 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 101 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to find some questions which can be solved using algorithm and flowchart. Also, ask the students to collect more information about the computer languages and translators.

9 Introduction to Python

Teaching Objectives

Students will learn about

- Python
- Installing Python IDLE
- Input and Output
- Data Types
- Operators
- Sample Programs
- Features of Python
- Programming in Python
- Variables in Python
- Comments in Python
- Precedence of Operators

Number of Periods	
Theory	Practical
4	3

Teaching Plan

While teaching this chapter, tell the students about Python as a high level programming language and its uses.

Share with the students the important features of Python.

Demonstrate the steps to start Python IDLE.

Tell the student python has two basic programming modes:

- Interactive mode
- Script mode

Tell the students the purpose and syntax of:

- The input() statement
- The print() statement

Introduce variables as memory location used to store data.

Share with the students the rules of naming variable in Python.

Tell the students about important terms like character set, keywords and data types (covering number, string, list, tuple, dictionary and none).

Explain the use and importance of comments in Python.

Explain the operators used in Python stating the common arithmetic operators (+, -, *, /, //, %, **), assignment operators(=, +=, -=, /=, %=, //=, **=), logical operators (and , or, not) and relational operators (!=, >, <, >=, <=).

Demonstrate to the students the use of these operators and commands in simple Python programs.

Explain the student precedence of operators.

Encourage the students to write simple programs in Python.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is Python?

Q. Expand IDLE.

Q. What is the use of arithmetic / logical / relational operators?

Q. Define keywords / variables / data types.

Q. What is the use of input() / print() statement?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 117 to 119 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 119 and 120 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 120 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to develop programs in Python to calculate:

- Volume of cube

- Volume of cuboid
- Radius of circle when the area of the circle is given

10 Intelligence and AI Approaches

Teaching Objectives

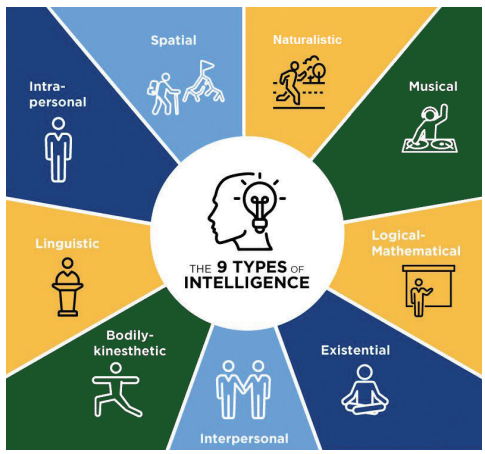
Students will learn about

- Intelligence
- Types of Intelligence
- AI Approach

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Define the meaning of Intelligence to the students.



- Visual-Spatial Intelligence
- Verbal-Linguistic Intelligence
- Logical-Mathematical Intelligence
- Bodily-Kinesthetic Intelligence
- Musical Intelligence
- Interpersonal Intelligence
- Existential Intelligence
- Intrapersonal Intelligence
- Naturalistic Intelligence

Make the students do some activities for exploring Intelligence. Define the AI Approach which simulate human attribute:

- Rule Based Approach
- Learning Based Approach

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define Intelligence.

Q. Define the qualities of these:

- Visual-Spatial Intelligence
- Verbal-Linguistic Intelligence
- Logical-Mathematical Intelligence
- Bodily-Kinesthetic Intelligence
- Musical Intelligence
- Interpersonal Intelligence
- Existential Intelligence
- Intrapersonal Intelligence
- Naturalistic Intelligence

Q. Define the two AI approaches:

- Rule Based Approach
- Learning Based Approach

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 124 to 126 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 126 and 127 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 127 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Make a presentation showing different types of intelligence and their qualities.