# TOUCHPAD

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

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

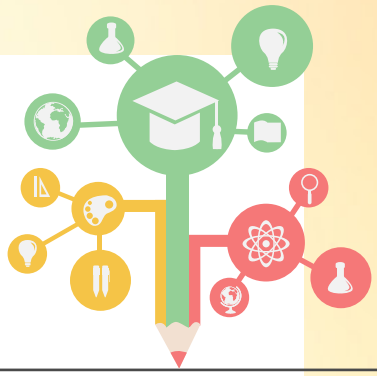
| Age 9 - 11 Years | |
|---|---|
| Physical | • Motor skills develop resulting in enhanced reflexes |
| Cognitive | • Applies several memory strategies at once<br>• Cognitive self-regulation is now improved |
| Language | • Ability to use complex grammatical constructions enhances<br>• Conversational strategies are now more refined |
| Emotional/ Social | • Self-esteem tends to rise<br>• Peer groups emerge |

| Age 11 - 20 Years | |
|---|---|
| Physical | • If a girl, reaches peak of growth spurt<br>• If a girl, motor performance gradually increases and then levels off<br>• If a boy, reaches peak and then completes growth spurt<br>• If a boy, motor performance increases dramatically |
| Cognitive | • Is now more self-conscious and self-focused<br>• Becomes a better everyday planner and decision maker |
| Emotional/ Social | • May show increased gender stereotyping of attitudes and behaviour<br>• 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.

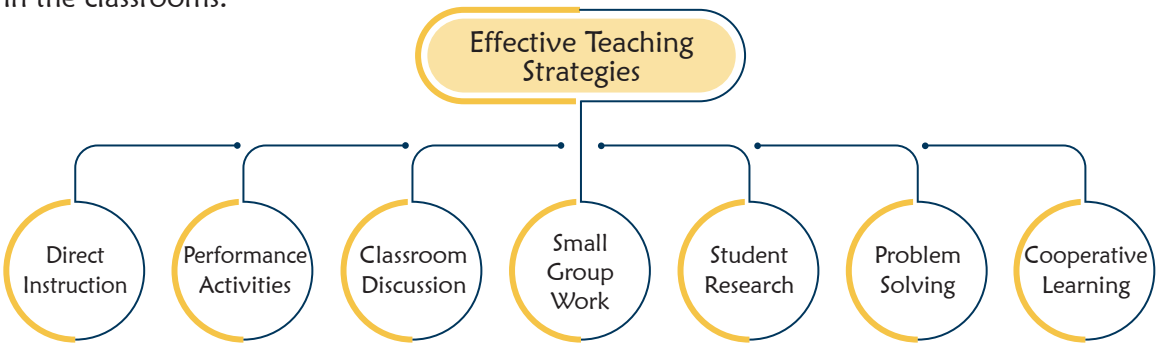
**After the class**

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

"Knowing yourself is the beginning of all wisdom."

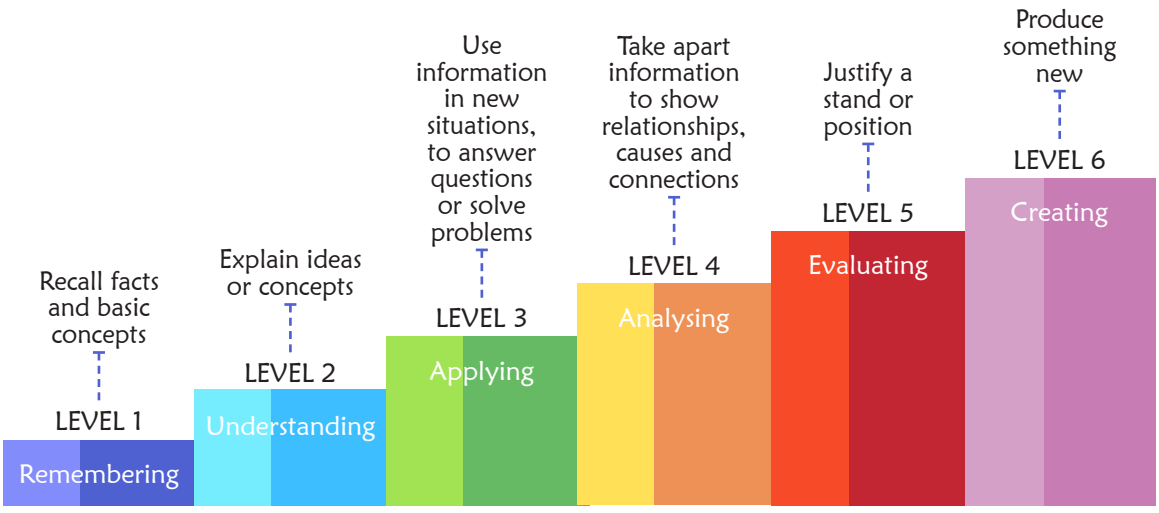
## Teaching Strategies

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

PLUS Ver. 4.0

## 1. PowerPoint 2019

### Teaching Objectives

- Creating a Photo Album
- Screen Recording
- Ink Equations
- Smart Lookup
- Ink Annotations

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 2 |

### Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take off' given on page 11 of the main course book.

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

Begin with introduction of PowerPoint. Let the students know that PowerPoint is a presentation software.

Show the students how to create a photo album.

Explain to the students how editing is done in a photo album.

Make the students aware that PowerPoint 2019 allows the user to record the action on the screen.

Let the students know about the Ink Equations feature of the PowerPoint 2019.

Tell them that the Smart Lookup feature of PowerPoint 2019 plays a very important role when meaning of some phrase is not clear.

Explain Ink Annotations to the students.

Tell them the steps to add annotations on a presentation.

Ask the student to solve the exercise 'Double Tap' given on page number 14.

### Extension

Ask the students some oral questions based on this chapter.

Q. Define PowerPoint 2019.

Q. Explain the Photo Album feature of PowerPoint 2019.

Q. What is screen recording in PowerPoint 2019?

Q. What is the function of Ink Equations feature of PowerPoint 2019?

Q. Describe the Smart Lookup feature of PowerPoint 2019.

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 19 and 20 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on page 20 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 20 in the main course book. This will enhance the ability of the students and serve as a Media Literacy and Critical Thinking activity.

Ask the students to complete the elements like 'Art Integration Learning' given on page 14 and 'Interdisciplinary Learning' given on page 16 in the computer lab.

### Suggested Activity

Ask the students to first create a photo album of their families and then do some editing into it.

## 2. More on Excel 2019

### Teaching Objectives

Students will learn about

- Selecting Cells in a Worksheet
- Column Width and Row Height
- Merging Cells
- Formatting Spreadsheets
- AutoFill
- Copying/Moving Data
- Inserting Rows/Columns
- Splitting Cells
- Customising Worksheet Tab

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 3 |

### Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 22 of the main course book.

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

Demonstrate how to select cells in a worksheet in Excel. Show them the labeled steps to modify the cell content.

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 Excel 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:

- **Wrap text** – displaying multiple lines of text in a cell
- **Formatting numbers** – applying various data types to the cells
- **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 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 AutoFill feature of Excel as automatically filling a series of data in the worksheet and the steps involved in the same to the students.

Ask the students to solve the exercise 'Double Tap' given on page number 26.

## Extension

Ask the students some oral questions based on this chapter.

Q. What allows us to select a single cell or a group of cells?

Q. How are cells selected in a worksheet?

Q. How can we modify cell content?

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

Q. What does it mean when data in a cell is displayed as #####?

Q. Define merging of cells.

Q. Define splitting of cells.

Q. What is wrap text feature of Excel?

Q. Name any three number formats available in Excel.

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 31 and 32 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 33 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 33 in the main course book. This will enhance the ability of the students and serve as a Productivity & Accountability and Technology Literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 30 in the computer lab and 'Experiential Learning' given on page 26 at home and show it to him/her the next day.

## Suggested Activity

Ask the students to design their class time-table in Excel 2019.

# 3. Charts, Formulas and Functions in Excel 2019

## Teaching Objectives

Students will learn about

- Using Charts
- Using Formulas to Perform Calculation
- Understanding Cell Range
- References to Other Worksheets
- Data Types in Excel
- Order of Operation
- Cell Referencing in Formulas and Its Types
- Functions

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 2 |

## Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 36 of the main course book.

Tell the students about charts and their components.

Show the different components of an Excel 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

Give the students an introduction to formulas in Excel 2019 for performing calculations.

Explain the order of operations while performing calculations in Excel 2019.

Introduce data type in Excel 2019 to the students.

While teaching this chapter, tell the students that Excel has some built-in formulas called functions.

Share with the students the knowledge of basic elements and rules of writing a formula in Excel.

Show them the different methods of copying and pasting a formula.

Introduce cell referencing as the use of cell address while writing a formula.

Make them understand the different types of cell referencing and the difference between the three – Absolute, Relative and Mixed.

Tell the students about rules for using functions and different categories of functions in Excel.

Demonstrate the use of mathematical functions – SUM, PRODUCT, MOD, SQRT, INT, POWER and COUNT.

Demonstrate the use of text functions – CONCATENATE, LEFT, RIGHT, LEN, UPPER and LOWER.

Demonstrate the use of logical functions – MAX, MIN and AVERAGE.

Demonstrate the use of date functions – TODAY, MONTH, YEAR and DAY

Ask the students to solve the exercise 'Double Tap' given on page number 38 and 49.

## Extension

Ask the students some oral questions based on this chapter.

Q. With what sign do formulas in Excel begin?

Q. How can you use formulas to perform calculations?

Q. Tell any two rules of precedence while performing operations in Excel 2019.

Q. What are functions in Excel 2019?

Q. Name the different elements of a formula in Excel 2019.

Q. What is the order of operation followed in Excel 2019?

Q. Define cell referencing.

Q. Name some important categories of Functions.

Q. State the purpose of SUM / SQRT / MOD / COUNT / LEN / RIGHT / TODAY / MAX function.

Q. What is the syntax of PRODUCT / INT / POWER / CONCATENATE / LEFT / UPPER / LOWER / MIN / AVERAGE function?

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 49 and 50 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', 'Go Online' and 'A Better Me' given on pages 51 and 52 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 52 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy and Productivity & Accountability activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 44 in the computer lab.

### Suggested Activity

Ask the students to enter their last marksheet in Excel 2019 and calculate total marks scored, average marks scored, maximum and minimum marks amongst all the marks and the number of subjects using various functions used in Excel 2019.

# 4. Digital Drawing in Krita

### Teaching Objectives

- Downloading and installing Krita
- Creating a New Document
- Working with Drawing Tools
- Using Fills, Gradients and Patterns
- Opening Krita
- Tools in Krita
- Working with Brushes

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 3 |

### Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 54 of the main course book.

Begin with introduction of Krita as a popular graphics application developed and distributed by Krita Foundation.

Let the students know how to download and install Krita.

Explain the steps to open Krita.

Make the students aware of the following components of Krita:

**Menu bar:** It contains different menus such as File, Edit, View, Image, Layer, Tools, etc. to do various tasks.

**Tool Options Docker:** It displays different options and properties that are available for the selected tool.

**Toolbar:** It contains shortcuts for some options like New, Open, Save, Undo and Redo present under the File and Edit menus.

**Toolbox:** It contains various tools that are used to create, edit and enhance an image.

**Workspace:** It is the place for creating and editing images.

Color Selector Docker: It is used to apply color effects to the images.

**Layers Docker:** It is used to set order of visibility of the objects.

**Status bar:** It displays the zoom level of the workspace and size of the Krita file.

Tell the students how to switch to drawing workspace.

Let them know how to create a new document.

Explain dimensions tab and content tab in Krita.

Share the knowledge of tools in Krita with the students.

Make the students understand how to work with drawing tools in Krita.

Tell the students that Krita offers many types of brushes giving different colouring effects to the drawings.

Explain to the students about using fills, gradients and patterns in Krita.

Let the students know about multibrush tool and how to use it.

Ask the students to solve the exercise 'Double Tap' given on page 61.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is Krita?

Q. Explain the components of Krita.

Q. What are the steps to switch to drawing space?

Q. What do you mean by dimensions tab?

Q. What is content tab?

Q. Name some tools present in Krita.

Q. Define:

| | | |
|---|---|---|
| a. Rectangle Tool | b. Ellipse Tool | c. Line Tool |
| d. Brush Tools | e. Brush Smoothing | f. Fill Tool |

Q. What is multibrush tool?

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 67 and 68 in the main course book as Test Your Skills. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 68 and 69 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 69 in the main course book. This will enhance the ability of the students and serve as a creativity activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 61 and 'Art Integration Learning' given on page 65 in the computer lab.

## Suggested Activity

Ask the students to create any document using the text tool in Krita taught in this chapter.

# 5. Introduction to HTML5 and CSS3

## Teaching Objectives

Students will learn about

- ☞ HTML
- ☞ Tags and Attributes
- ☞ Rules for Writing HTML Codes + Structure of an HTML Document
- ☞ HTML5 Document structure
- ☞ Creating and Saving an HTML document
- ☞ Editing an Existing HTML Document
- ☞ Introducing CSS3

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 3 |

## Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 74 of the main course book.

While teaching this chapter, tell the students that websites consist of millions of pages called web pages which contain text, graphics, audios, videos and links to other pages.

Introduce Hypertext Markup Language (HTML) as language that describes the structure of a web page. Make the students understand the meaning of the terms like hypertext and markup language. Tell the students about the tools needed for working with HTML5.

Make the students aware about the different types of HTML editors – WYSIWYG editor and Text editor.

Familiarise the students with basic HTML terms like tags, container tags, empty tags, block level tags, text level tags and attributes.

Tell the students about the concept of nesting of tags.

Share with the students the general rules followed for writing HTML5 codes.

Show to the students a HTML5 document and make them understand and identify the various sections and structure of the HTML5 document.

Demonstrate to the students the steps involved in:

- Creating a HTML document
- Saving a HTML document
- Previewing a web page

Tell the students about the meaning and use of basic HTML tags covering <HTML>, <HEAD>, <TITLE> and <BODY> tags alone with their attributes.

Demonstrate to the students the steps involved in designing a web page using the various HTML tags discussed.

Introduce CSS3 to the students.

Let the students know that there are three ways to use the CSS styles in HTML document. They are:

Inline style sheet

Internal Style Sheet

External Style Sheet

Show the students the method of editing an existing HTML5 document.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is HTML?

Q. Define hypertext and Markup language.

Q. Name the different types of HTML editors.

Q. What are tags and attributes?

Q. State the rules followed while writing HTML5 codes.

Q. Name the text editor most commonly used to write HTML5 codes.

Q. State the use of <HTML> / <HEAD> / <BODY> / <TITLE> tags.

Q. What is the difference between container tags and empty tags?

Q. What is CSS3?

Q. Name different CSS styles.

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 82 and 83 in the main course book as Test Your Skills. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 83 and 84 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 84 in the main course book. This will enhance the ability of the students and serve as Information Literacy and Creativity activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 81 in the computer lab.

## Suggested Activity

Ask the students to develop a similar web page in HTML5.

# 6. Internet Services

## Teaching Objectives

Students will learn about

- ☞ Social Networking
- ☞ E-Banking
- ☞ Blogging
- ☞ RSS (Really Simple Syndication)
- ☞ Skype
- ☞ Newsgroup
- ☞ Cloud Computing
- ☞ Podcast

| Number of Periods | |
|---|---|
| Theory | Practical |
| 3 | 0 |

## Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 86 of the main course book.

While teaching this chapter, brief the students about Internet.

Introduce Social Networking to the students using examples.

Explain to the students the concept of Facebook in detail.

Demonstrate to the students the function of X (formerly known as Twitter) in detail.

Explain the Internet services like:

- E-Banking
- Blogging
- RSS (Really Simple Syndication)
- Newsgroup
- Cloud Computing
- Podcasting

Tell the students the difference between a blog and a website.

Explain to the students the benefits and risks of using cloud computing.

Ask the students to solve the exercise 'Double Tap' given on page 89.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is Social network?

Q. What is Facebook?

Q. What is Twitter?

Q. What is Quora?

Q. What is Skype?

Q. What is E-banking?

Q. What is a newsgroup?

Q. What is blogging?

Q. What is cloud computing?

Q. What is OneDrive?

Q. What is RSS?

Q. What is Podcasting?

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 96 to 98 in the main course book. Tell the students to try sections such as 'Scratch Your Brain and 'Go Online' given on page 98 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 98 in the main course book. This will enhance the ability of the students and serve as a communication and technology literacy activity.

Ask the students to complete the elements like 'Experiential learning' given on page 88 and 'Interdisciplinary Learning' given on page 93 in the computer lab.

### Suggested Activity

Ask the students to learn how to use the internet services.

# 7. Algorithm Intelligence

### Teaching Objectives

Students will learn about

- ☞ Algorithm
- ☞ Flowcharts
- ☞ Solving Problems Using Algorithms and Flowcharts
- ☞ Mind Maps

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 2 |

### Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 104 of the main course book.

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.

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

Encourage the students to write algorithms involving some basic tasks like going to market to purchase a pen 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.

Make the students aware of mind maps.

Let the students know how to draw a mind map.

Ask the students to solve the question in 'Double Tap' on page 106.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is an algorithm?

Q. What is a flowchart?

Q. Explain the rules to draw flowcharts.

Q. What is mind map?

Q. How will you draw a mind map for computer?

## Evaluation

After explaining the chapter, let the students do the exercises given on page 110 and 111 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 111 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 112 in the main course book. This will enhance the ability of the students and serve as a creativity and technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 105 and 'Interdisciplinary Learning' given on page 109 in the computer lab.

## Suggested Activity

Ask the students to find some questions which can be solved using algorithm and flowchart.

# 8. Introduction to Programming

## Teaching Objectives

Students will learn about

- ☞ Computer Languages
- ☞ Working of Language Translators
- ☞ Language Translator

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 1 |

## Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take off' given on page 114 of the main course book.

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

Tell the students that computer languages are categorized 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**, **COBOL**, **FORTRAN**, **PASCAL**, etc.), fourth generation languages (examples: **SQL**, **Perl**, **Python**, etc.) and natural language or fifth generation languages Mercury, OPS5 and Prolog associated with expert system and 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.

Also make the students aware of working of language translators.

Ask the students to solve the question in 'Double Tap' on page number 116.

## 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.

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 117 and 118 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 119 in the main course book.

Ask the students to complete the elements like 'Experiential Learning' given on page 117 at home and show it to him/her the next day.

### Suggested Activity

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

## 9. Python

### Teaching Objectives

Students will learn about

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

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 3 |

### Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take off' given on page 121 of the main course book.

While teaching this chapter, tell the students that Python is a popular high-level programming language and it is a powerful language used for general-purpose programming.

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

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

Demonstrate the students the steps to install Python.

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

- Interactive Mode
- Script 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
- Writing a program
- Saving Python 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 initializing 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.

Also explain some more programs to the students.

Ask the students to solve the question in 'Double Tap' given on pages 126 and 127.

### Extension

Ask the students some oral questions based on this chapter.

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?

Q. Explain the precedence of operators in Python.

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 135 and 136 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on pages 136 and 137 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 137 in the main course book. This will enhance the ability of the students and serve as an information and technology literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 133 in the computer lab.

### Suggested Activity

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

Ask the students to create a program in Python. Tell them to use all the functions taught in this chapter.

## 10. Intelligence and AI Approaches

### Teaching Objectives

Students will learn about

- ☞ Intelligence
- ☞ AI Approach
- ☞ Types of Intelligence

## Teaching Plan

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 1 |

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 139 of the main course book.

Define the meaning of Intelligence to the students.

Explain the types of Intelligence along with the qualities of the same to the students:

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

Make the students do some activities for exploring Intelligence.

Define the AI Approach which simulate human attribute:

- Rule Based Approach
- Learning Based Approach

Ask the students to solve the question in 'Double Tap' on page 141.

## Extension

Ask the students some oral questions based on this chapter.

Q. Define Intelligence.

Q. Define the qualities of these:

- 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 143 and 144 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on pages 144 and 145 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 145 in the main course book. This will enhance the ability of the students and serve as a creativity and technology literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 142 and 'Experiential Learning' given on page 143 at home and show it to him/her the next day.

## Suggested Activity

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