7

# TOUCHPAD

PLUS Ver. 4.0

# Teacher's Manual

*Extended Support for Teachers*

ORANGE
www.orangeeducation.in
www.thetouchpad.com

# 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 |

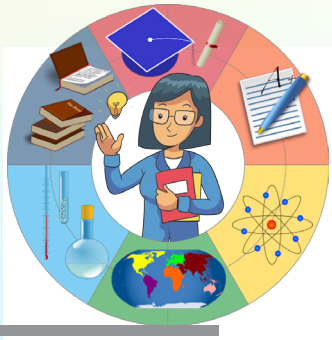
"If you cannot do great things, do small things in a great way."

| 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:**

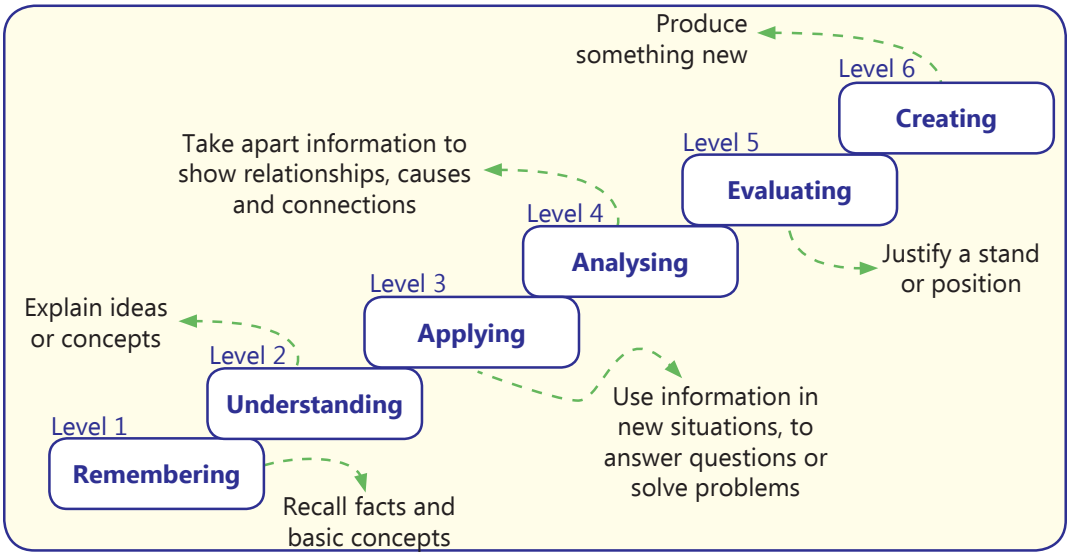
Reflect on what worked well and why. If needed, revise the lesson plan.

## 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.

Class 7

# LESSON PLAN

PLUS Ver. 4.0

## 1. Number System

### Teaching Objectives

Students will learn about

- ☞ Number System
- ☞ Decimal to Binary Conversion
- ☞ Binary to Decimal Conversion
- ☞ Operations on Binary Numbers

| 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 11 of the main course book.

While teaching this chapter, tell the students that a number system is simply a method of counting.

Introduce base or radix as the total number of digits used in a number system.

Inform them that there are four important types of number systems – Decimal (base 10), Binary (base 2), Octal (base 8) and Hexadecimal (base 16).

Make the students recall the method of writing expanded form of a number under decimal number system.

Let the students know that:

- In decimal number system, the numbers are expressed using ten digits, 0 to 9 and expanded with base 10.
- In octal number system, the numbers are expressed using eight digits, 0 to 7 and expanded with base 8.
- In hexadecimal number system, the numbers are expressed using fifteen digits, 0 to 9 and A to F, and expanded with base 16.

Show the students the method of converting:

- Decimal number to binary number by successive division by 2 and arranging the remainders in reverse order.
- Binary number to decimal number by multiplying digits with 2 raised to the power of place of that digit starting from 0 on the left.

Share the rules of binary addition, subtraction, multiplication and division.

Make the students understand the method of carrying out mathematical operations on binary numbers and verifying the results by corresponding conversions to decimal numbers

Ask the students to solve the exercise 'Double Tap' given on page number 15.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is a number system?

Q. Write the radix of decimal / binary / octal / hexadecimal number system.

Q. Which digits are used to express a decimal / binary / octal / hexadecimal number?

Q. What is decimal number system?

Q. What is binary number system?

Q. What is the value of addition of binary digits 1 and 1?

Q. What is the value of subtraction of binary digits 0 and 1?

Q. Which number system is used by computers?

Q. Which number language is known as machine language?

Q. Define octal number system.

Q. What is hexadecimal number system?

Q. Write the steps to convert a decimal number to a binary number.

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 16 and 17 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 18 in the main course book.

Let the students solve the questions given in the DIY In The Lab section on page 18. This will enhance the ability of the students and serve as a technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 12 and 'Interdisciplinary Learning' given on page 14 at home and show it to him/her the next day.

## Suggested Activity

1. Convert the last four digits of your parents' mobile numbers into binary number.
2. Ask the students to prepare a comparative chart with four columns, the first one listing the digits used in hexadecimal number system and in the remaining three columns, their equivalent value under decimal, binary and octal number systems.

# 2. Advanced Features of Excel

## Teaching Objectives

Students will learn about

- ☞ Sorting data
- ☞ Filtering data
- ☞ Conditional formatting

| 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 20 of the main course book.

While teaching this chapter, tell the students that Excel 2019 provides easy options for sorting data and highlighting the required information in a worksheet.

Introduce sorting as arranging the data in ascending or descending order.

Demonstrate to the students the various steps involved in sorting of data in an Excel worksheet.

Explain the concept and use of Custom Sort feature.

Introduce filtering as hiding unwanted data from a set of data.

Show students the various steps involved in applying Filters in a worksheet.

Share with the students that Filters once applied can be easily removed and tell them the method of removing filters.

Introduce conditional formatting as highlighting the required information.

Tell the students about basic difference between filtering (unwanted information gets hidden) and conditional formatting (required information gets highlighted).

Explain the various criteria detailed under conditional formatting.

Demonstrate the steps involved in applying conditional formatting on a worksheet.

Ask the students to solve the exercise 'Double Tab' given on page number 28.

## Extension

Ask the students some oral questions based on this chapter.

Q. Define sorting.

Q. In what order can sorting be done?

Q. What is the difference between sort and custom sort features?

Q. What are filters?

Q. How can filters be removed in a worksheet?

Q. What do you understand by conditional formatting feature?

Q. How is conditional formatting different from filtering data?

Q. When is the conditional formatting criteria Highlight Cell Rules / Data Bars / Icon Sets used?

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 25 and 26 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 26 and 27 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 27 in the main course book. This will enhance the ability of the students and serve as a technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 21 at home and show it to him/her the next day and 'Art Integration Learning' given on page 23 in the computer lab.

## Suggested Activity

1. Ask the students to enter their height and weight along with similar information for their nine friends. Sort the data with primary criteria as heights in ascending order and secondary criteria as weights in descending order.
2. Highlight the cells where the heights are less than the height of the student or weight is more than the weight of the student who is preparing the worksheet.

# 3. Layers in Krita

## Teaching Objectives

- Components of Krita
- Layers in Krita
- Using Multiple Layers
- Creating a New File
- Managing Layers

| 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 30 of the main course book.

Begin with introduction of Krita as a free and open-source graphics editor.

Let them know about the components of Krita.

Make the students aware of how to create a new file in Krita.

Make the students understand that layers in Krita are transparent sheets containing objects which are stacked on top of each other so that the individual properties of an object are preserved.

Explain how to manage layers in Krita.

Also let them know how multiple layers can be used to create an image in Krita.

Ask the students to solve the exercise 'Double Tap' given on page 35.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is Krita?

Q. Name the components of Krita.

Q. What is the function of Tool Options Docker in Krita?

Q. What is the function of Layers Docker in Krita?

Q. What are layers in Krita?

Q. How do layers help in editing?

### Evaluation

After explaining the chapter, let the students do the exercises given on page 36 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 37 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 37 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 35 in the computer lab.

### Suggested Activity

Ask the students to create any two images using multiple layers.

# 4. Animations in Krita

### Teaching Objectives

Students will learn about

- Basic Concepts in Animation
- Creating an Animation of Bouncing Ball
- Creating Animated LED Lights

| 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 39 of the main course book.

Begin with the introduction of animation in Krita as a method by which images are manipulated in a manner so that they appear as moving objects.

Explain to the students the basic concepts of Animation in Krita like Stage, Timeline, Frames and Keyframes.

Let the students know how to create an animation of bouncing ball in Krita.

Make the students aware of how to create animated LED lights in Krita.

Also teach them the steps of creating animated LED lights in Krita.

Ask the student to solve the exercise 'Take Off' given on page 39.

### Extension

Ask the students some oral questions based on this chapter.

Q. What is animation?

Q. Name some basic concepts of animation in Krita.

Q. What is stage in animation mode of Krita?

Q. What is timeline used for in Krita?

Q. What are frames in Krita?

Q. Define keyframes.

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 45 and 46 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 46 and 47 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 47 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 44 in the computer lab.

### Suggested Activity

Ask the students to create an animation where two cars are coming on a road from opposite directions and crash in the center.

## 5. Google Apps

### Teaching Objectives

Students will learn about

- Google
- Apps of Google

| 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 52 of the main course book.

While teaching this chapter, brief the students apps in general and Google apps in particular.

Begin with introduction of an app as a short form of application which is made of programs or codes.

Make them aware of the fact that Google is a US-based software organisation founded in 1998 by Sergey Brin and Larry Page.

Let the students know about several apps of Google like Gmail, Google Drive, Google Maps, Google Docs, Google Sheets, Google Slides, YouTube, etc.

Explain to the students how useful these Google apps are.

Also make them understand how these Google apps have made our day-to-day activities easier to perform.

Ask the students to solve the exercise 'Double Tap' given on page 52.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is an app?
Q. By which company was the term 'App' first coined?
Q. Who founded Google?
Q. What does Google provide for common use?
Q. What is Gmail?
Q. Define Google Drive.
Q. What can one store in Google Drive?
Q. How much can one store in Google Drive?
Q. What are the features of Google Drive?
Q. Define Google Maps.
Q. Define Google Docs.
Q. Define Google Sheets.
Q. What do you know about Google Sheets?
Q. What is YouTube?

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 65 and 66 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 66 and 67 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 67 in the main course book. This will enhance the ability of the students and serve as a technology literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 56, 'Experiential Learning' given on page 57 and 'Art Integration' given on page 64 in the computer lab.

## Suggested Activity

Ask the students to learn how to use the Google Maps.

# 6. App Development

## Teaching Objectives

Students will learn about

- What is an App?
- Categories of Mobile Apps
- Downloading and Installing the App
- The Android and iOS
- Varieties of Apps
- Developing an App

| 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 69 of the main course book.

While teaching this chapter, brief the students about smartphones and technology.

Tell the students that an App is a software program primarily developed for hand-held smart devices such as mobile and tablet.

Explain to the students the difference between the Android and iOS in detail.

Demonstrate the types of Mobile Apps to the students with example, that are:

- Native Apps
- Web Apps
- Hybrid Apps

Explain the following categories of Apps to the students along with the examples:

- Gaming Apps
- Productivity Apps
- Entertainment Apps
- Utility Apps
- Educational Apps
- Social Networking Apps
- Communication Apps
- E-Commerce Apps

Explain to the students the steps involved in downloading and installing the Apps.

Explain to the students the steps involved in developing an App.

Ask the students to solve the exercise 'Double Tap' given on pages 71 and 81.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is an App?

Q. What is Android?

Q. Define iOS.

Q. What are Native Apps?

Q. What are Web Apps?

Q. What are Hybrid Apps?

Q. Name some Hybrid Apps.

Q. Define the following:

- Gaming Apps
- Utility Apps
- Communication Apps
- Productivity Apps
- Educational Apps
- E-Commerce Apps
- Entertainment Apps
- Social Networking Apps

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 81, 82, 83 and 84 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 83 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 a responsibility based and technology literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 71, 'Experiential Learning' given on page on page 73 and 'Art Integration Learning' at home and show it to him/her the next day.

### Suggested Activity

Ask the students to develop an App for reciting tables with your help.

# 7. More on HTML5

### Teaching Objectives

Students will learn about

- ☞ HTML
- ☞ Background Properties
- ☞ Font Properties
- ☞ HTML Tags and Attributes
- ☞ Text Properties
- ☞ Margin Properties

| 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 86 of the main course book.

While teaching this chapter, tell the students about HTML5.

Introduce HTML to the students using examples.

Explain to the students the HTML tags and attributes which are:

- <HTML> tag
- <HEAD> tag
- <Title> tag
- <BODY> tag
- <Hn> tag
- <P> tag
- <BR> tag
- <HR> tag
- <SUP> tag
- <SUB> tag

Demonstrate to the students the steps involved in using these tags using programs and syntax.

Tell the students about HTML and attributes used in making web pages.

Introduce the students with the text Properties and show the how to use these:

Make the students aware of the background properties and show them how to use these.

Explain font properties to the students.

Tell the students about how to control multiple pages using CSS with the help of a program.

Demonstrate the students with the margin properties and show them how to use them with the help of a program.

Ask the students to solve the exercise 'Double Tap' given on page 90.

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 HTML5?

Q. What is the function of:

- <HTML> tag
- <HEAD> tag
- <Title> tag
- <BODY> tag
- <Hn> tag
- <P> tag
- <BR> tag
- <HR> tag
- <SUP> tag
- <SUB> tag
- <FONT> tag

Q. Define following text properties:

a. color b. text-align c. text-indent

d. text-decoration e. text-transform

Q. Define the following background properties:

a. background-color b. background-image c. background-repeat

Q. Define the following font properties:

a. font-family b. font-size c. font-style

Q. Define margin properties

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 94, 95 and 96 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 96 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 97 in the main course book. This will enhance the ability of the students and serve as a technology literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 91 in the computer lab and 'Art Integration Learning' given on page on page 94 at home and show it to him/her the next day.

## Suggested Activity

Ask the students to create a web page using all the HTML Tags taught in this chapter.

# 8. Lists and Tables in HTML5

## Teaching Objectives

Students will learn about

- ☞ Creating Lists
- ☞ Creating Tables

| 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 99 of the main course book.

While teaching this chapter, tell the students that HTML tags are used to create a web page.

Introduce list as collection of related items.

Tell the students that there are three types of lists – Ordered List (Numbered List), Unordered List (Bulleted List) and Definition List (Description List).

Explain the use of <OL> tag to create ordered lists, <UL> tag to create unordered lists and <DL> tag to create definition lists.

Explain the use of <TABLE> tag and its child tags covering <TR>, <TD>, <TH> and <Caption>.

Make the students aware of CSS properties used with <TABLE> Tag like Border Property, Border-style Property, Border-color Property, Border-spacing Property, Width Property, Padding Property, Background-color Property and Color Property.

Discuss the use of different attributes of <TD> tag explaining about ROWSPAN and COLSPAN and VALIGN attributes.

Let the students know about the <TR> tag.

Ask the students to solve the exercise 'Double Tap' given on page number 103 and 110.

## Extension

Ask the students some oral questions based on this chapter.

Q. Define List / Table.
Q. How many types of Lists can be created in HTML?
Q. Name the different types of Lists that can be created in HTML.
Q. What is an Ordered list?
Q. Define unordered list.
Q. What is a definition list?
Q. Name the attributes of <OL> tag.
Q. Name the tags used to create Definition List.
Q. Name the tags that can be used to create different kinds of tables.
Q. What are the attributes of <TABLE> / <TD> tag?

## Evaluation

After explaining the chapter, let the students do the exercises given on pages 110, 111 and 112 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 112 and 113 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 113 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 'Art Integration Learning' given on page 104 and 'Interdisciplinary Learning' given on page on page 110 at home and show it to him/her the next day.

## Suggested Activity

Ask the students to create:

- List of favourite games of 10 friends
- Table of car names and their models
- List of favourite games of 10 friends
- Table of car names and their models

# 9. Algorithmic Intelligence

## Teaching Objectives

- ☞ Information Processing
- ☞ Conditions in a Program

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

## 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.

Begin with introduction of algorithm as a step-by-step instructions in a sequential manner to solve a problem.

Let them know that a flowchart is a pictorial representation of an algorithm.

Make the students aware of information processing.

Make the students understand that Binary code is the fundamental form of the programming data that is directly interchanged by a computer.

Explain about conditions in a program that are required to make certain decisions based on the logic of the program.

Also let them know about if-then-else statements and conditions related to them.

Ask the students to solve the exercise 'Double Tap' given on page 124.

### Extension

Ask the students some oral questions based on this chapter.

Q. What is algorithm?

Q. What is a flowchart?

Q. Name the base to write a program.

Q. What is information processing?

Q. What is the importance of processing of information?

Q. What is binary code?

Q. Define conditions in a program.

Q. Why are conditional statements used in a program?

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 124 and 125 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on pages 125 and 126 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 126 in the main course book. This will enhance the ability of the students and serve as a creativity and critical thinking activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 122 and 'Experiential Learning' given on page on page 123 at home and show it to him/her the next day.

### Suggested Activity

Ask the students to write any if-then-else conditional statements.

## 10. Conditional Statements in Python

### Teaching Objectives

Students will learn about

☞ Decision Making Statements

| 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 128 of the main course book.

Begin with description of situations in real life when we need to take decisions based on the situation.

Explain to the students about the Decision Making Statements and the options available in Python.

Let the students know the steps involved in executing the following statements:

- if statement
- if...else statement

- Nested if statement
- if...elif...else ladder

Ask the students to solve the exercise 'Double Tap' given on page number 131.

### Extension

Ask the students some oral questions based on this chapter.

Q. Which statements are used in decision making in Python?

Q. Write the names of decision making statements.

Q. What is the function of if statement?

Q. What is the function of if...else statement?

Q. What is the function of nested if statement?

Q. What is the function of if...elif...else statement?

### Evaluation

After explaining the chapter, let the students do the exercises given on pages 136 and 137 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on pages 137, 138 and 139 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 139 in the main course book. This will enhance the ability of the students and serve as a critical thinking 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 make a program in Python to create a food menu using looping decision making statements.

# 11. Concept of Smart Living

### Teaching Objectives

Students will learn about

☞ Students will learn about

☞ Sustainable Development Goals

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 0 |

### Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 141 of the main course book.

Begin with introduction of a variety of gadgets that have made people's life easier than before.

Make the students aware of smart homes.

Explain to students the benefits of smart homes.

Let the students know about the devices used in smart homes like:

Smart TV

Video door wells

Smart cameras

Smart smoke detectors

Smart lighting

Smart speakers

Make the students understand that smart devices use various domains of AI like Computer Vision, Machine Learning, Natural Language Processing and Deep Learning.

Ask the students to solve the exercise 'Double Tap' given on page number 141.

## Extension

Ask the students some oral questions based on this chapter.

Q. What are smart homes?

Q. What are the benefits of smart homes?

Q. What are smart home owners always connected to?

Q. What kind of devices are used in smart homes?

Q. Name the various domains of AI that the smart home devices use.

Q. What is smart TV?

Q. What are video doorbells?

Q. What are smart cameras?

Q. Define smart smoke detectors.

Q. What is smart lightening?

Q. Define smart speakers.

## 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 'Scratch Your Brain', 'Go Online' and 'A Better Me' 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 technology literacy activity.

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

## Suggested Activity

Ask the students to find more devices that are used in smart homes.