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# TOUCHPAD®

PRIME Ver. 2.1

# 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 | | V | VI | VII | VIII |
|---|---|---|---|---|---|---|---|---|---|---|
| Monday | | | | | | B | | | | |
| Tuesday | | | | | | R | | | | |
| Wednesday | | | | | | E | | | | |
| Thursday | | | | | | A | | | | |
| Friday | | | | | | K | | | | |
| Saturday | | | | | | | | | | |

# Development Milestones in a Child

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher to 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 |

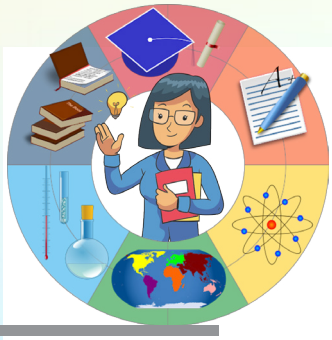
"If you cannot do great things, do small things in a great way."

| Age 9 - 11 Years | |
|---|---|
| **Physical** | • Motor skills develop resulting 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 needs 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.

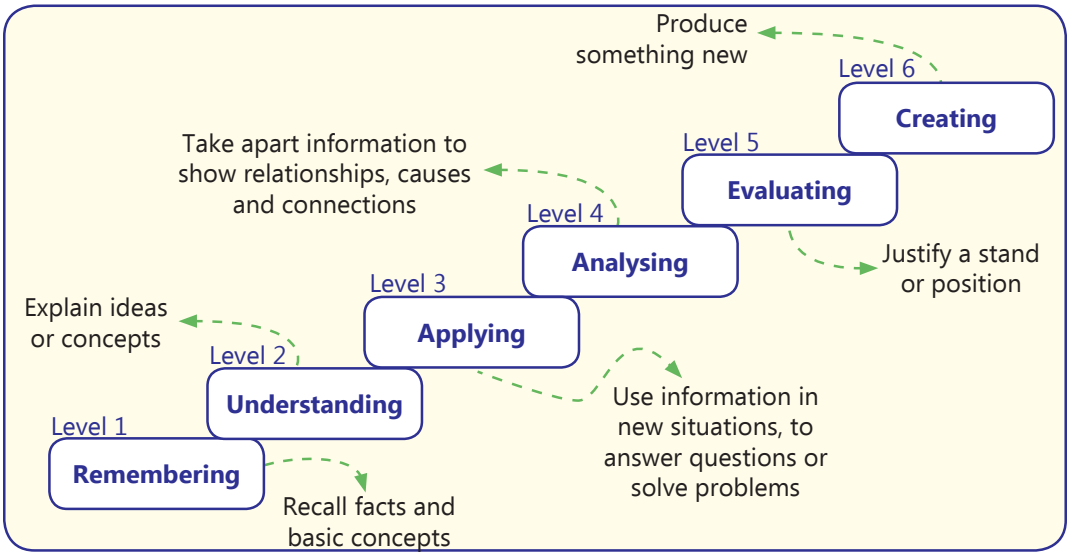
"Knowing yourself is the beginning of all wisdom."

## 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."

# LESSON PLAN

**Touchpad PRIME Ver 2.1**

**Class-8**

## 1. Latest Technological Development

### Teaching Objectives

Students will learn about

- ☞ Artificial Intelligence
- ☞ Augmented Reality and Virtual Reality
- ☞ Internet of Things
- ☞ 3D Printing
- ☞ RPA (Robotic Process Automation)

### Teaching Plan

**Number of periods: 2**

Demonstrate Artificial Intelligence to the students along with the main areas of AI:

- Expert system
- Natural Language processing
- Intelligent agents
- Pattern recognition
- Robotics
- Intelligent Apps (I-Apps)

Explain the following to the students along with the examples in detail:

- Augmented Reality
- Virtual Reality
- Internet of Things (IOT)
- 3D Printing
- RPA (Robotics Process Automation)

Ask the student to solve the exercise Warm Up! given on page number 13.

### Extension

Ask the students some oral questions based on this chapter.

Q. What is an Artificial Intelligence?

Q. What is an Augmented Reality?

Q. What is an Virtual Reality?

Q. What is an Internet of Things?

Q. What is an 3D Printing?

Q. What is an RPA?

### Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 14 and 15 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 16 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Find Out and In the Lab section on Page 16 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

### Suggested Activity

Ask the students to try any digital assistant like Alexa or Siri and ask "What is Virtual Reality?".

## 2. Computer Networking

### Teaching Objectives

Students will learn about

- Computer Network
- Need for Computer Network
- Advantages of Computer Network
- Components of a Network
- Network Terminology
- Devices Required for a Network
- Types of Network
- Topology
- Network Architecture
- Wireless Networking Technology
- Protocol

### Teaching Plan

**Number of Periods: 4**

While teaching this chapter, tell the students that the process of connecting computers and peripheral devices with each other to exchange data is called computer networking.

Tell the students about the meaning and basics of computer network.

Share with the students the need for computer network – for resource sharing and for communication.

Discuss with the students the advantages of a computer network.

Introduce network terms like Server (host computer) and Client (dependent on server).

Explain the different types of servers to the students covering dedicated server, print server, database server, network server and web server.

Tell the students about the components required for a network covering NIC, hub/switch, router, modem and networking cable.

Share with the students that on the basis of geographical area covered, the networks can be classified into LAN (Local Area Network), MAN (Metropolitan Area Network), WAN (Wide Area Network), PAN (Personal Area Network) and CAN (Campus Area Network).

Introduce Topology as geometric arrangement of computers or nodes in a network.

Explain the difference between different types of topologies covering bus topology, ring topology, star topology, tree topology and mesh topology (Refer Suggested Activity also).

Tell the students that the network architecture defines the overall design of the computer network.

Share with the students the two types of network architectures as Peer-to-Peer network and Client-Server network.

Share with the students about the wireless networking technologies detailing about Wi-Fi and Bluetooth.

Introduce Protocol as a set of rules that govern the communication between the computers on a network.

Discuss briefly about the different types of protocols explaining about HTTP, HTTPS, FTP, TC/IP, POP3, IMAP and SMTP.

## Extension

Ask the students some oral questions based on this chapter.

Q. Define computer network.

Q. What is the need for a computer network?

Q. What are the advantages of a computer network?

Q. Define server / client.

Q. What are the different types of computer servers?

Q. What are the components required for a network?

Q. Define LAN / MAN / WAN / PAN / CAN.

Q. Define Topology.

Q. Name different types of topologies.

Q. What is meant by protocol?

## Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 27, 28 and 29 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 29 in the main course book.

Take the students to the computer lab and let them practice the activity given in the In the Lab section on Page 29 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

## Suggested Activity

Ask the students to make models of different types of topologies using marbles and used wire pieces / straws.

# 3. Working with Access 2016

## Teaching Objectives

Students will learn about

- Concept of a Database
- Advantages of a Database System
- Types of Databases
- Terms Related to a Database
- Access 2016
- Components of Access 2016
- Creating a Database
- Data Types in Access 2016
- Types of Views in Access
- Rules for Writing a Field Name in Access
- Creating a Table
- Opening an Existing Database
- Exiting Access 2016

## Teaching Plan

**Number of periods: 2**

While teaching this chapter, tell the students that the computerized database system was introduced in 1960s.

**Introduce:**

- Database as organizing data in a manner which helps to store and retrieve a large amount of data efficiently.
- Database Management System as a collection of programs required to store and retrieve data from a database.

Explain to the students the meaning of the two types of databases – Flat File Database and Relational Database.

Share with the students the advantages of a database system.

Draw on board and explain the structure of a database to the students explaining about table, fields, records, primary key, query, report and form.

Introduce MS Access 2016 as a powerful and easy to use Relational Database Management System and is a part of MS Office Suite.

Demonstrate the steps to start MS Access 2016.

Familiarize the students with the various components of MS Access 2016 window covering Quick Access Toolbar, Title Bar, Ribbon, Navigation Pane, Navigation Buttons, Work Area and Objects Tabs.

Demonstrate to the students the two ways of creating a database as:

- Creating a blank database
- Creating a database using Templates

Show the students the method to open an existing database and close a database.

Explain different data types used in MS Access 2016 covering Text, Memo, Number, Auto Number, Date/Time, Yes/No, OLE, Hyperlink and Lookup Wizard.

Discuss with the students the use of the different types of views in MS Access 2016 as Datasheet view and Design view.

Share with the students the rules for defining field names in MS Access 2016.

Tell the students that Tables can be created in three ways.

Demonstrate to the students the steps to create a Table:

- In Design view
- In Datasheet view
- By using Templates

Show to the students the method to exit MS Access 2016.

Ask the student to solve the exercise Warm Up! given on page number 41.

## Extension

Ask the students some oral questions based on this chapter.

Q. Define database.

Q. What is Database Management System?

Q. Expand DBMS.

Q. Name the different types of databases.

Q. What type of database is MS Access 2016?

Q. Give any two advantages of Database System.

Q. Define Table / Query / Report / Form.

Q. Name any three data types used in MS Access 2016.

Q. What does OLE stands for?

Q. What are the rules for writing field names?

Q. What is the use of Field Name / Description in the Table design window?

## Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 41 and 42 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 43 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 43 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

## Suggested Activity

Ask the students to create a table storing information about details of their ten friends and sort the records in the table in alphabetical order.

# 4. More on Access

## Teaching Objectives

Students will learn about

- ☞ Forms in Access
- ☞ Queries in Access
- ☞ Reports in Access

## Teaching Plan

**Number of periods: 2**

While teaching this chapter, tell the students that MS Access is used to create tables and maintain records in a database along with preparing Forms, Queries and Reports.

Introduce Forms as objects used to add, edit and display data from tables in a user friendly manner.

Share with the students that a Form can be displayed in three views – Form View, Design View and Layout View.

Demonstrate to the students the steps to create a Form.

Explain different types of Forms covering Multiple Items, Datasheet, Split Form and Modal Dialog.

Familiarize the students with the Navigation Bar of the Form window to view and navigate between records in a Table.

Tell the students that the appearance of the Form can be formatted using Design and Format tabs.

Introduce Query as the object that can give information which the user might not be able to find by looking at the Table directly.

Explain the different types of Queries as: Select Query, Parameter Query, Action Query, Crosstab Query and SQL.

Tell the students about the relationship between the Primary Key and the Foreign Key.

Show to the students the steps to define relationships between tables.

Demonstrate the steps to create a query.

Introduce Report as an object used to organize and present data in a user friendly format for printing purpose.

Demonstrate the steps to:

- Create a Report
- Print a Report

Ask the students to solve the exercise Warm Up! given on page number 52.

## Extension

Ask the students some oral questions based on this chapter.

Q. Define Form / Query / Report.

Q. Name the different views in which a Form can be displayed.

Q. Name the different types of Forms in MS Access.

Q. Where is Navigation Bar located?

Q. Name the different types of Queries.

Q. Define Primary Key / Foreign key.

Q. Name any four parameters of Query window.

### Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 52, 53 and 54 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 54 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 55 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

### Suggested Activity

Using the Table created in the previous chapter create a query to display names of friends whose name starts with A or D.

## 5. More on HTML

### Teaching Objectives

Students will learn about

- Inserting Images
- Creating Marquee
- Linking Web Pages
- Frames

### Teaching Plan

**Number of periods: 4**

While teaching this chapter, tell the students that HTML allows inserting images and frames on web pages as well as interlinking them.

Tell the students that HTML supports JPEG, GIF and PNG image formats.

Tell the students that <IMG> tag is used to insert images and it takes the attributes as SRC, WIDTH, HEIGHT, ALIGN, BORDER and ALT.

Demonstrate to the students the use of <IMG> tag and its attributes.

Introduce Marquee as the moving objects on a web page to get special attention of the users.

Explain the use of <MARQUEE> tag and its attributes as BEHAVIOUR, DIRECTION and SCROLLAMOUNT.

Make the students understand that a hyperlink is an underlined text or an image which when clicked takes the user to some other location.

Share with the students that <A> is used to create links and the attributes that this tag can take are – LINK, ALINK and VLINK.

Demonstrate the use of <A> tag and its attributes to hyperlink web pages (See Suggested Activity also).

Introduce Frames as a feature to display more than one web page on a single screen of the web browser.

Explain the use of <FRAMESET> tag and <FRAME> tag to create and define frames on a web page.

Tell the students that the <FRAME> tag can take FRAMEBORDER, NORESIZE and SRC as attributes.

Demonstrate the use of <FRAMESET> and <FRAME> tags to create frames on a web page.

Ask the student to solve the exercise Warm Up! given on page number 69.

### Extension

Ask the students some oral questions based on this chapter.

Q. Which tag is used to insert images on a web page?

Q. State the use of SRC / WIDTH / ALIGN /ALT attribute of IMG tag.

Q. Which image formats are supported by HTML?

Q. What is the use of MARQUEE tag?

Q. Which tag is used to link web pages?

Q. Name the attributes that can be taken by FRAME tag.

### Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 70 and 71 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 71 and 72 in the main course book.

Take the students to the computer lab and let them practice the activity given in the In the Lab section on Page 72 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

### Suggested Activity

Ask the students to create an e-shopping web site listing categories of items on home page and details of items on separate category pages.

## 6. Introduction to Photoshop

### Teaching Objectives

Students will learn about

- Features of Adobe Photoshop CC
- Opening Adobe Photoshop CC 2018
- Creating a New Document
- Adobe Photoshop CC 2018 Interface
- Opening an Image in Photoshop
- Placing an Image in an Existing Document
- Tools in Photoshop
- Move and Selection Tools
- Cropping Tools
- Painting Tools
- Inserting Text
- Saving a File in Photoshop

## Teaching Plan

**Number of periods: 5**

While teaching this chapter, tell the students that Photoshop is a designing software developed in 1988.

Introduce student with Adobe Photoshop CC using examples.

Explain the features of Photoshop to the students in detail.

Demonstrate to the students the steps involved in opening Photoshop CC 2018.

Demonstrate to the students the steps involved in creating a new document in Photoshop.

Explain all the components of Photoshop interface with proper labeled pictures.

Tell the students the steps to open an image in Photoshop.

Demonstrate to the students the steps involved in placing an image in an existing document in Photoshop.

Explain to the students the following tools of Photoshop and explain them in details with steps:

a. Move and Selection tools
   - Rounded Marquee tool
   - Elliptical Marquee tool
   - Lasso tool
   - Polygonal Lasso tool
   - Magnetic Lasso tool
   - Quick Selection tool
   - Magic Wand tool

b. Cropping tools
   - Crop tool
   - Perspective Crop tool
   - Slice tool and Slice Select tool

c. Painting tools
   - Brush tool
   - Pencil tool
   - Color Replacement tool
   - Mixer Brush tool
   - History Brush tool
   - Gradient tool
   - Paint Bucket tool
   - 3D Material Drop tool

d. Inserting Text
   - Using Horizontal Type Tool
   - Using Horizontal Type Mask Tool

e. Transform Tool

Tell the students the steps to save a file and closing a file in Photoshop along with exiting Photoshop.

Ask the student to solve the exercise Warm Up! given on page number 85.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is the role of Adobe Photoshop?

Q. What are the features of Photoshop?

Q. What is the use of Move tool?

Q. What is the use of Selection tool?

Q. What is the use of Cropping tool?

Q. What is the use of Inserting text tool?

Q. What is the use of transform tool?

## Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 95 and 96 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 96 and 97 in the main course book.

Take the students to the computer lab and let them practice the activity given in the In the Lab section on Page 97 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

## Suggested Activity

Ask the students to crop two images and make them one using proper Photoshop tools taught in this chapter.

# 7. More on Photoshop CC

## Teaching Objectives

Students will learn about

- ☞ Layers in Photoshop
- ☞ Painting Tools in Photoshop
- ☞ Retouching Tools
- ☞ Drawing Tools
- ☞ Shape Tools
- ☞ Navigation Tools

## Teaching Plan

**Number of periods: 3**

While teaching this chapter, revise the features and tools of Photoshop CC for the students taught in the earlier chapter.

Demonstrate to the students the Layers in Photoshop CC 2018 and explain the step involved in creating a new layer.

Explain all the components of Photoshop interface with proper labeled pictures.

Tell the students the steps to open an image in Photoshop.

Demonstrate to the students the steps involved in placing an image in an existing document in Photoshop.

Explain to the students the following tools of Photoshop and explain them in details with steps:

a. Painting tools
   - Eye Dropper tool
   - 3D Material Eyedropper tool
   - Color Sample tool
   - Ruler tool
   - Note tool
   - Eraser tool
   - Background Eraser tool
   - Magic Eraser tool

b. Retouching tools
   - Healing Brush tool
   - Patch tool
   - Content Aware Move tool
   - Red Eye tool

- Clone Stamp tool
- Pattern Stamp tool
- Blur, Sharpen and Smudge tool
- Dodge, Burn and Sponge tool

c. Drawing tools
- Pen tool

d. Shape tools
- Custom Shapes

### Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Painting tool?

Q. What is the use of Retouching tool?

Q. What is the use of Navigation tool?

Q. What is the use of Drawing tool?

Q. What is the use of Shapes tool?

### Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 112 and 113 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 113 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Find Out and In the Lab section on Page 113 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

### Suggested Activity

Ask the students to download and edit an image and make them one using proper tools.

# 8. More on Python

### Teaching Objectives

Students will learn about

- ☞ Operators in Python
- ☞ Operator Precedence
- ☞ Conditional Statements

### Teaching Plan

**Number of periods: 4**

While teaching this chapter, tell the students that Python is an object-oriented programming language.

Explain the operators used in Python stating the common arithmetic operators (+, -, *, /, //, %, **), relational operators (= =, !=, >, <, >=, <=) and logical operators (&, |).

Demonstrate to the students the use of these operators and commands in simple Python programs. Introduce conditional statements as the statements used to change the default flow of a program.

Explain that Python offers three decision making statements:

- if statement
- if...else statement
- if...elif...else statement

Explain the situation when these statements are used and demonstrate the use of each statement.

Introduce looping statement as the statement that allows repeating a set of instructions a given number of times.

Share with the students the use and syntax of the 'for' loop.

Tell the students that jump statements are used to transfer the control of the program outside the loop even if all the values of the sequence have not been taken.

Share with the students that the jump statements offered by Python are:

- The break statement (used to terminate the loop).
- The continue statement (used to force the next iteration of the loop and skip the current iteration).

Demonstrate the use of the jump statements in Python.

Ask the students to solve the exercise Warm Up! given on page number 117, 120 and 124.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is Python?
Q. What is the use of the input() / print() function?
Q. What is the use of conditional statements?
Q. Name the conditional statements used in Python.
Q. What are looping statements used for?
Q. What is the use of Jump statements in Python?
Q. Name the jump statements used in Python.

## Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 124, 125 and 126 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 126 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 126 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

## Suggested Activity

Write a program in Python to:

- Input 5 numbers and check which of these numbers are prime or composite.
- Input age of a person and check whether he or she is a senior citizen or not.

- Calculate the average marks of three students in four subjects each and arrange the averages in ascending order.

# 9. Loops in Python

## Teaching Objectives

Students will learn about

- ☞ Iterative Statements
- ☞ Types of Iterative Statements
- ☞ Infinite Loop
- ☞ Loop with else Statement

## Teaching Plan

**Number of periods: 4**

While teaching this chapter revise Python for the students and repeat the features of Python from the earlier class.

While teaching this chapter, tell the students about Python has some looping statements.

Demonstrate to the students the steps involved in using these statements using programs and syntax are:

a. FOR statement
   - using the range() statement

b. WHILE statement
   - infinite loop
   - while loop using else statement

c. JUMP statement
   - break statement
   - continue statement

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

Ask the student to solve the exercise Warm Up! given on page number 133 and 134.

## Extension

Ask the students some oral questions based on this chapter.

Q. What are looping statement?

Q. What is the function of FOR statement?

Q. What is the function of WHILE statement?

Q. What is the function of JUMP statement?

Q. What is a FUNCTION?

## Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 135 and 136 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 136 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 136 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity

### Suggested Activity

Ask the students to make a list of series where you can apply the FOR and JUMP statements.

# 10. Robotics & AI

### Teaching Objectives

Students will learn about

- ☞ The Birth of Artificial Intelligence
- ☞ What is Artificial Intelligence?
- ☞ What can Artificial Intelligence do today?
- ☞ Implementing Artificial intelligence
- ☞ Philosophers Views on Artificial Intelligence
- ☞ Robots and Robotics
- ☞ Uses of Robotics
- ☞ Androids
- ☞ Mechatronics

### Teaching Plan

**Number of periods: 2**

While teaching this chapter, tell the students that computers have made technological advancements into robotics industry.

Introduce the terms robots and robotics to the students.

Share with the students the various uses to which robotics can be put to.

Explain the different types of robots as industrial robots and service robots.

Tell the students about androids as robot designed to execute highly sophisticated instructions.

Introduce mechatronics as a new fields arising out of combination of mechanics and electronics.

While teaching this chapter, tell the students that human brain has the ability for reasoning, problem solving and learning.

Make the students aware about the birth of the concept of artificial intelligence.

Explain the students in detail about the concept of artificial intelligence.

Share with the students the various fields in which artificial intelligence is being successfully implemented covering:

- Robotics vehicles
- Game playing
- Logistics planning
- Machine translation
- Natural language processing
- Speech recognition
- Autonomous planning and scheduling
- Robotics
- Machine vision
- Machine learning

Explain to the students the philosophers' views on artificial intelligence laying significance on:

- Weak AI Hypothesis
- Strong AI Hypothesis

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 a robot?
Q. What is robotics?
Q. State two uses of robotics.
Q. Define android.
Q. What is mechatronics?
Q. What is AI?
Q. Who is the father of AI?
Q. Name some fields where AI is being implemented.
Q. What is Weak AI Hypothesis?
Q. What is Strong AI Hypothesis?

## Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 150, 151 and 152 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 152 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Find Out and In the Lab section on Page 152 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.