

# TOUCHPAD

Modular Ver. 2.1

6

## TEACHER'S MANUAL

Extended Support for Teachers



[www.orangeeducation.in](http://www.orangeeducation.in)

Teacher's Time Table		B R E A K						
Periods / Days								
		0	I	II	III	IV	V	VII
	Monday							
	Tuesday							
	Wednesday							
	Thursday							
	Friday							
	Saturday							
	Sunday							

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# DEVELOPMENT MILESTONES IN A CHILD

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



Age  
5 - 8 Years

## Physical

- First permanent tooth erupts
- Shows mature throwing and catching patterns
- Writing is now smaller and more readable
- Drawings are now more detailed, organised and have a sense of depth

## Cognitive

- Attention continues to improve, becomes more selective and adaptable
- Recall, scripted memory, and auto-biographical memory improves
- Counts on and counts down, engaging in simple addition and subtraction
- Thoughts are now more logical

## Language

- Vocabulary reaches about 10,000 words
- Vocabulary increases rapidly throughout middle childhood

## Emotional/ Social

- Ability to predict and interpret emotional reactions of others enhances
- Relies more on language to express empathy
- Self-conscious emotions of pride and guilt are governed by personal responsibility
- Attends to facial and situational cues in interpreting another's feelings
- Peer interaction is now more prosocial, and physical aggression declines

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

Age  
9 - 11 Years

### Physical

- Motor skills develop resulting in enhanced reflexes

### Cognitive

- Applies several memory strategies at once
- Cognitive self-regulation is now improved

### Language

- Ability to use complex grammatical constructions enhances
- Conversational strategies are now more refined

### Emotional/ Social

- Self-esteem tends to rise
- Peer groups emerge

Age  
11 - 20 Years

### Physical

- If a girl, reaches peak of growth spurt
- If a girl, motor performance gradually increases and then levels off
- If a boy, reaches peak and then completes growth spurt
- If a boy, motor performance increases dramatically

### Cognitive

- Is now more self-conscious and self-focused
- Becomes a better everyday planner and decision maker

### Emotional/ Social

- May show increased gender stereotyping of attitudes and behaviour
- May have a conventional moral orientation

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

“Family is the most important thing in the world.”

# TEACHING PEDAGOGIES



## 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.

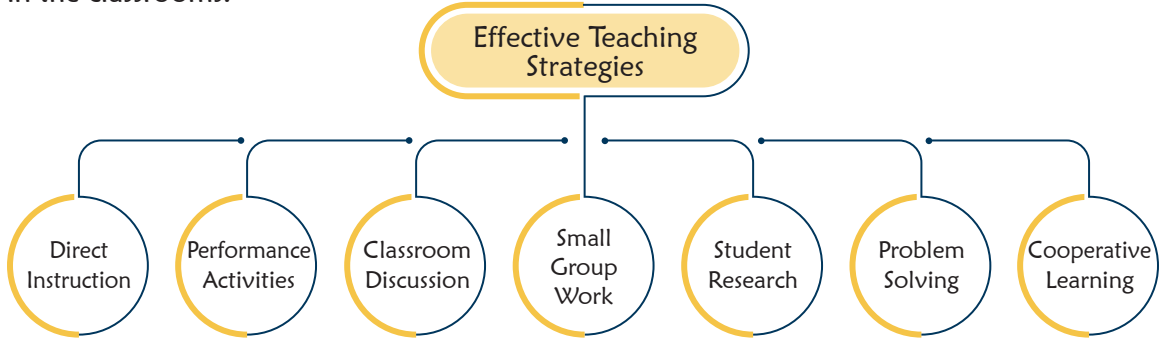
### After the class

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

“Knowing yourself is the beginning of all wisdom.”

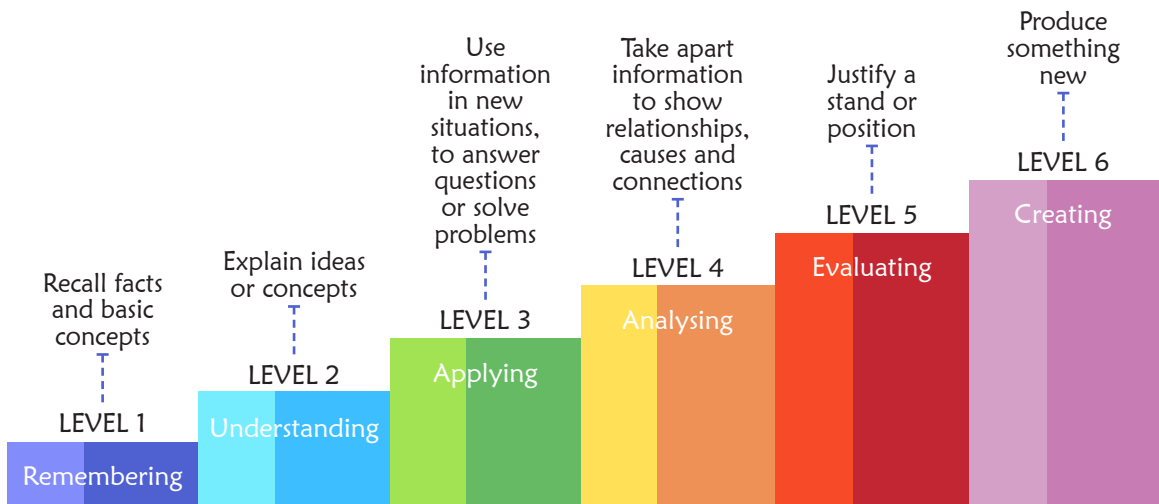
# Teaching Strategies

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. ”

## 1 Categories of Computers

### Teaching Objectives

Students will learn about

- ✦ Categories of Computers
- ✦ Some Other Special Computers

### Teaching Plan

Number of Periods	
Theory	Practical
2	1

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

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

- Type
- Purpose
- Size, speed, processing power, and cost

Make them understand these categories in details with examples.

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

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

Tell the students about the type of computers with examples:

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

Make them understand that there are some other special computers:

- Embedded Computers which is further divided into Digital Camera, ATM and Microwave, etc.
- Handheld Computers which are further divided into Smartphone, PDA, Smartwatch, Gaming Consoles, etc.

## Extension

Ask the students some oral questions based on this chapter.

Q. What is an analog computer?

Q. What is a digital computer?

Q. What is a hybrid computer?

Q. What is a microcomputer?

Q. What is a minicomputer?

Q. What is a mainframe computers?

Q. What is a supercomputers?

Q. Give examples each of:

- Analog Computer
- Digital computer
- Hybrid Computer

## Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 11 and 12 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 12 of the main course book will enhance the ability of the students and serve as a Information Literacy activity.

## Suggested Activity

Ask the students to search for some other special computers.

# 2

## Windows 10

### Teaching Objectives

Students will learn about

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

### Teaching Plan

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

Number of Periods	
Theory	Practical
1	1



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

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

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

Introduce the students with the features of Window 10:

- Sneak
- Snap
- Jump List

Also share the steps involved in using these features easily.

Ensure that the scope of 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 an operating system?

Q. What is Windows 10?

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

- Sneak
- Snap
- Jump list

Q. What is Windows Media Player?

Q. What is a removable storage device?

Q. What is the purpose of pictures folder?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 17 and 18 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 18 of the main course book will enhance the ability of the students and serve as a Information Literacy activity.

### Suggested Activity

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

## 3

## Introduction to PowerPoint 2016

### Teaching Objectives

Students will learn about

- ★ Starting PowerPoint 2016
- ★ Components of PowerPoint Window

- ✦ Creating a New Presentation
- ✦ Entering Data on the Slide
- ✦ Using Built in Templates
- ✦ Slide Views
- ✦ Saving a Presentation
- ✦ Opening an Existing Presentation

Number of Periods	
Theory	Practical
2	2

## Teaching Plan

While teaching this chapter, tell the students that Microsoft PowerPoint 2016 is a part of Microsoft Office package.

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

Demonstrate to the students the steps to start PowerPoint 2016.

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

Demonstrate the steps to:

- Create a new presentation
- Enter data on a slide in title and subtitle placeholders
- Use Built-In Templates
- Slide Views
- Saving a Presentation
- Opening an Existing Presentation

Introduce Slide views and different options of slide views.

Explain different options and demonstrate the steps involved in:

- Normal View
- Slide Sorted View
- Notes Page View
- Reading View
- Slide Show View

Tell the students how to:

- Save a presentation
- Opening a saved Presentation

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

## Extension

Ask the students some oral questions based on this chapter.

Q. What is PowerPoint 2016?

- Q. Define Title Bar / Status Bar.
- Q. What do you mean by Ribbon / Placeholder?
- Q. Which key is pressed to delete a selected placeholder?
- Q. What are the various ways in which a slide show can be started?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 26 and 27 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 27 of the main course book will enhance the ability of the students and serve as a Critical Thinking and Leadership & Responsibility activity.

### Suggested Activity

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

## 4

## Working with PowerPoint 2016

### Teaching Objectives

Students will learn about

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

### Teaching Plan

While teaching this chapter, tell the students that Microsoft PowerPoint 2016 is a program that allows creating interesting and exciting presentations.

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

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

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

Demonstrate the steps involved to add WordArt to a slide.

Number of Periods	
Theory	Practical
2	2

Introduce WordArt as it allows to create text effects that are not available through font formatting.  
Demonstrate the steps involved to add WordArt to a slide.

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

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

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

Demonstrate the steps involved to move an object.

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

Tell the students the steps involved to rotate an object.

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

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

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

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

### Extension

Ask the students some oral questions based on this chapter.

Q. Define slide layout.

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

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

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

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 33 to 35 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 35 of the main course book will enhance the ability of the students and serve as a Information Literacy and Leadership & Responsibility activity.

### Suggested Activity

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

### Teaching Objectives

Students will learn about

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

Number of Periods	
Theory	Practical
2	2

### Teaching Plan

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

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

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

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

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

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

Explain the steps involved in:

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

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

Show the difference Component of a chart.

Demonstrate the steps of:

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

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

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

## Extension

Ask the students some oral questions based on this chapter.

Q. Define slide layout.

Q. How to add a table in PowerPoint?

Q. How to add a chart in PowerPoint?

## Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 49 to 51 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 51 of the main course book will enhance the ability of the students and serve as a Creativity and Collaboration activity.

## Suggested Activity

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

# 6

## Advanced Features of Powerpoint 2016

### Teaching Objectives

Students will learn about

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

### Teaching Plan

While teaching this chapter, tell the students that PowerPoint 2016 is used to create Slide presentations. Explain to the students that transitions are used to determine how the presentation moves from one slide to the next.

Demonstrate the steps of transitions to slides in a presentation.

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

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

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

Number of Periods	
Theory	Practical
2	2

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

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

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

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

Explain to the students that PowerPoint 2016 allows to import and use the files or objects created in Microsoft office applications.

Demonstrate the steps involved to import data.

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

### Extension

Ask the students some oral questions based on this chapter.

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

Q. Can we add video files on a slide?

Q. Define transition.

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

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

Q. What is meant by animation in MS PowerPoint?

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

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 58 and 59 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 59 of the main course book will enhance the ability of the students and serve as a Productivity & Accountability and Initiative activity.

### Suggested Activity

## 7

## Internet and E-mail

### Teaching Objectives

Students will learn about

- ★ The Internet
- ★ World Wide Web

- ✦ How does the Web Work?
- ✦ Using Web Browser
- ✦ Using URLs
- ✦ E-Mail
- ✦ Emoticons and Acronyms

Number of Periods	
Theory	Practical
2	1

## Teaching Plan

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

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

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

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

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

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

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

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

Share with the students the advantages of e-mail.

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

Demonstrate in detail the steps involved in:

- Creating an e-mail account
- Composing and Sending an e-mail (with reference to fields like To, Cc, Bcc and Subject)
- Reading an E-Mail
- Logging in
- Log out from the e-mail account (tell them the importance of this step)

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

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

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

## Extension

Ask the students some oral questions based on this chapter.

Q. What is World Wide Web?



- Q. Define web server.
- Q. How the web works?
- Q. Expand URL.
- Q. Define an e-mail.
- Q. What do you understand by emoticons?
- Q. What is an acronym?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 71 to 73 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 73 of the main course book will enhance the ability of the students and serve as a Media Literacy and Flexibility activity.

### Suggested Activity

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

## 8 Introduction to Programming

### Teaching Objectives

Students will learn about

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

### Teaching Plan

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

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).

Number of Periods	
Theory	Practical
3	2

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

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

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

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

Introduce the students with Python and its features.

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

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

Demonstrate the students the steps to install Python.

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

- Script Mode
- Interactive Mode

Explain the Working with Interactive Mode and its Steps.

Show to the students the components of Python window.

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

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

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

Tell the students the Variables in Python along with the declaring and 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
- Logical Operators
- Assignment Operators
- Relational Operators

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

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

### Extension

Ask the students some oral questions based on this chapter.

Q. What are computer languages?

Q. What is Low-Level language?

Q. What is High-Level language?

Q. Give examples of each:

a. Machine Language

b. Assembly Language

c. Third Generation Language

d. Fourth Generation Language

e. Fifth Generation Language

Q. What are advantages of HLL?

Q. What is a language translator?

Q. What is an assembler?

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

Q. Explain the working of language translators.

Q. What is Python?

Q. What are features of Python?

Q. What are the steps to install Python?

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

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

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

Q. What are variables in Python?

Q. What are comments in Python?

Q. What are operators in Python?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 89 to 91 of the main course book as Exercise.

In Creative Assignment, activity like In The Lab given on Page 91 of the main course book will enhance the ability of the students and serve as a Technology Literacy activity.

### Suggested Activity

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

