3

TOUCHPAD®

PLUS Ver. 3.1

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 • 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

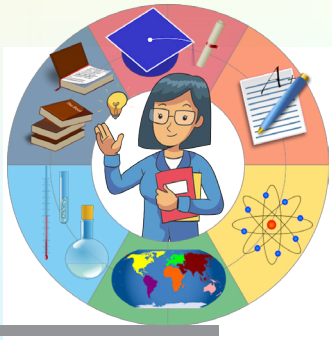
"If you cannot do great things, do small things in a great way."

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

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

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

"Family is the most important thing in the world."



Teaching Pedagogies

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students 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.

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During the class:

Present the lesson plan.

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After the class:

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

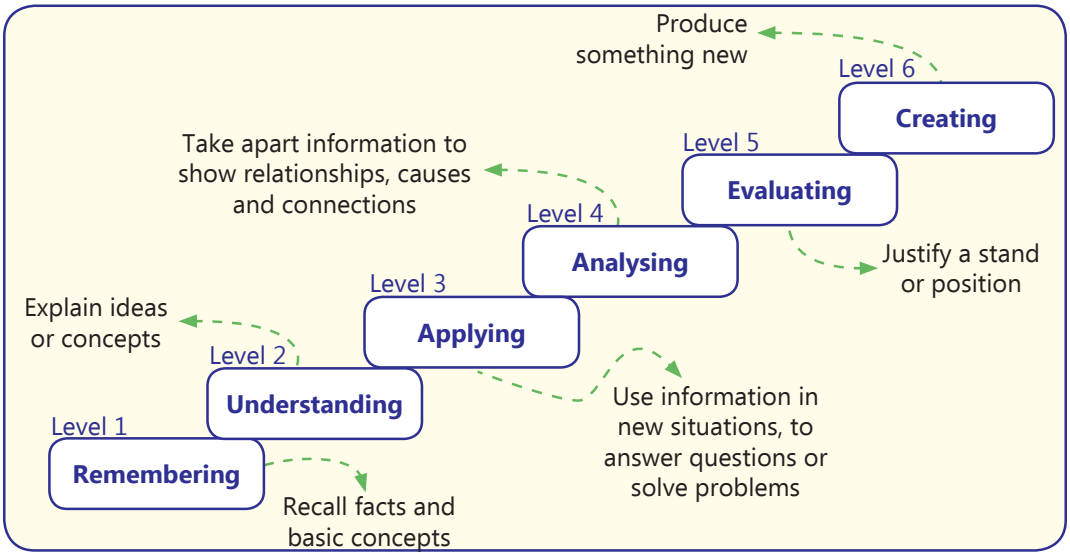
"Knowing yourself is the beginning of all wisdom."

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 3

LESSON PLAN

Touchpad Ver 3.1

1. The Computer System

Teaching Objectives

Students will learn about

- How does a Computer Work?
- Features of a Computer
- Storage
- Types of Computers

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a computer is an electronic machine made up of various devices that help to enter data, process it and give the results.

Tell them that a computer works through Input-Process-Output (IPO) cycle.

Explain the meaning of the terms input and input devices.

Tell them how keyboard, mouse and scanner are used to input data into a computer.

Explain the meaning of the terms process, processor and processing.

Tell them how CPU processes data with the help of Arithmetic Logic Unit (ALU) – for arithmetic and logical calculations, Memory Unit (MU) – for storing data and instructions and Control Unit (CU) – for coordinating between all parts of the CPU.

Explain the meaning of the terms output and output devices.

Make the students understand the meaning of the term Storage.

Tell them examples of some commonly used storage devices and basic features of each of the storage device.

Share with the students the features of a computer covering:

- **Accuracy** – does not make mistake.
- **Storage** – stores information and does not forget it.
- **Work Process** – does not get tired and work for long hours.
- **Speed** – works at a very high speed.

Tell the students that there are four types of computers:

- Microcomputer
- Minicomputer
- Mainframe computer
- Supercomputer

Explain all types of computers to the students along with examples

Extension

Ask the students some oral questions based on this chapter.

Q. What is a Computer System?

Q. Expand IPO.

Q. Define input / output / processing.

Q. Name some input, processing and output devices.

Q. What is storage?

Q. Give examples of some storage devices.

Q. What is a Software?

Q. What are the features of computer?

Q. How many types of computer are there?

Q. Define:

a. Microcomputer

b. Minicomputer

c. Mainframe Computer

d. Supercomputer

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 14, 15 and 16 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 16, 17 and 18 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 18 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 prepare a comparative table on chart paper different types of computers.

2. Computer Software

Teaching Objectives

Students will learn about

- ☞ Hardware
- ☞ Software

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that a computer system consists of two main components- **hardware** and **software**.

Tell the students that the parts of the computer that can be touched are called hardware. Also tell examples of some devices like, such as **keyboard**, **mouse**, **monitor**, **speakers**, **printer**, **scanner**, **DVD**, **pen drive**, etc.

Explain the students that hardware cannot work itself. A program that is used to work on step-by-step instructions is called software.

Tell the students about computer software and its types.

Explain to the students the difference between Application software and System software. Also share about the Linux operating system.

Tell the students about some default application software:

- **RhythmBox** – used to play songs.
- **LibreOffice Writer** – used to type letters, articles, applications and essays.
- **LibreOffice Impress** – used to create presentations.
- **GIMP** – used to create and edit photos & designs.

Extension

Ask the students some oral questions based on this chapter.

Q. How many types of components a computer system consists of?

Q. What is hardware?

Q. What is software?

Q. How many types of software are there?

Q. Write the use of the following:

a. RhythmBox
b. LibreOffice Writer
c. LibreOffice Impress
d. GIMP

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 24, 25, 26 and 27 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 27 and 28 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 28 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 collect information about some more input/output devices and the purpose for which they are used.

3. Let's Know About Linux

Teaching Objectives

Students will learn about

- Linux
- Changing the Position of Launcher
- Ubuntu Desktop and its Components
- Mouse Pointer Shapes
- Changing the Desktop Background
- Closing your Computer System
- Using the Ubuntu Icon

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that operating system is one of the most important software as without this software we cannot use our computer at all.

Give a brief introduction of Linux.

Tell the students the about the useful features of Linux. Also tell them about Ubuntu.

Make the students aware about the concept of Ubuntu desktop and its components:

- Menu bar
- Desktop background
- Icons
- Launcher
- Show Applications

Demonstrate the steps to change the desktop background.

Tell the students about the use of Ubuntu Icon.

Show the step involved in changing the position of Launcher.

Explain the students about the mouse pointer shapes.

Demonstrate the steps involved in changing the position of the taskbar.

Show the step involved in closing your computer system.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the importance of an operating system?

Q. Give examples of some popular operating systems.

Q. Which company developed linux operating system?

Q. What are the important features of Linux?

Q. What is desktop?

Q. Define icons.

Q. What is taskbar?

Q. Can the position of the taskbar be changed?

Q. What are Control Buttons?

Q. What are the steps to change the desktop background?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 35 and 36 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 37 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Hands-On and Lab Session section on Page 37 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 change desktop background and the position of taskbar.

4. Introduction to LibreOffice Writer

Teaching Objectives

Students will learn about

- ☞ Uses of LibreOffice Writer
- ☞ Saving a Document
- ☞ Components of LibreOffice Writer Window
- ☞ Printing a Document

- ☞ Starting LibreOffice Writer
- ☞ Opening a Saved Document
- ☞ Working with LibreOffice Writer
- ☞ Closing LibreOffice Writer

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that LibreOffice Writer is word processing software in the category of application software.

Make the students aware of the various uses of LibreOffice Writer.

Demonstrate the steps involved in starting LibreOffice Writer.

Show the various components of LibreOffice Writer window covering **Title Bar**, **Writer Control Button**, **Menu Bar**, **Standard Toolbar**, **Formatting Toolbar**, **Edit Area**, **Rulers**, **Horizontal and Vertical Scroll Bars**, **Status Bar** and **Zoom Slider** to the students.

Familiarize the students that while working on LibreOffice Writer, some frequently used keys other than alphabet and number keys are Spacebar, Enter, Delete and Backspace.

Demonstrate the steps involved in:

- Creating a new Word file
- Typing text
- Saving a document
- Opening a saved document
- Printing a document
- Closing LibreOffice Writer

Extension

Ask the students some oral questions based on this chapter.

Q. What is LibreOffice Writer?

Q. What are the various uses of LibreOffice Writer?

Q. Name some important components of LibreOffice Writer window.

Q. Which company developed LibreOffice Writer?

Q. What are the shortcut keys to open / save / print a document?

Q. What are the various ways in which the user can exit from LibreOffice Writer?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 45 and 46 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 46 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 47 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 Writer document on Myself. The students should take a printout of the document and paste it in their computer notebook / practical file.

5. Fun With Tux Paint

Teaching Objectives

Students will learn about

- ☞ Tools of Tux Paint
- ☞ Undo and Redo tool
- ☞ Magic Tool
- ☞ Slide Show

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that there are many more effects present in Magic Tool in Tux Paint.

Recall with the students the use Paint, Shapes, Eraser, Lines, Stamp, Text and Magic tools of Tux Paint.

Explain to the students the Fill Effect (fill colours in closed shapes) of Magic Tool.

Demonstrate the steps to apply Fill Effect of the Magic Tool.

Tell the students about the Smudge Effect (wipe effect) of Magic Tool.

Demonstrate the steps to apply Smudge Effect of the Magic Tool.

Explain to the students the Real Rainbow Effect (draw a rainbow around a picture) of Magic Tool.

Demonstrate the steps to apply Real Rainbow Effect of the Magic Tool.

Explain to the students the Foam Effect (bubbles effect) of Magic Tool.

Demonstrate the steps to apply Foam Effect of the Magic Tool.

Explain to the students the Mosaic Effect (pattern formation by arranging tiles, glass, etc.) of Magic Tool.

Demonstrate the steps to apply Mosaic Effect of the Magic Tool.

Tell the students about the purpose of Undo and Redo tools as well as the difference between the two.

Introduce slide show as running all scenes of a story or text, one after another.

Show to the students the steps to make a slide show of the drawings.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Paint / Shapes / Eraser / Lines / Stamp / Text / Magic tool?

Q. What is the Fill / Smudge / Real Rainbow / Foam / Mosaic effect of Magic tool?

Q. What is the difference between the Undo and the Redo tools of Tux Paint?

Q. What is Slide Show?

Q. Which key is pressed to exit the slide show?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 56, 57 and 58 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 58 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 59 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 zoo using stamps in Tux Paint.

6. Stepwise Thinking

Teaching Objectives

Students will learn about

- ☞ Reasoning and Problem Solving
- ☞ Case Study
- ☞ Stepwise Thinking
- ☞ Programming

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Tell the students about the following in detail using appropriate examples:

- Reasoning
- Problem Solving

Explain the Stepwise Thinking to the students with the steps involved in the process using suitable examples.

Share some Case Study with the students to explain the above taught factors in problem solving approach.

Tell the students about Programming and give a brief introduction about it.

Extension

Ask the students some oral questions based on this chapter.

Q. What is reasoning?

Q. What is problem solving?

Q. What is stepwise thinking?

Q. What is case study?

Q. What is programming?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 65 and 66 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 66 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 67 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 collect write a paragraph on My Favourite Sport in Writer applying various formatting features to make the paragraph attractive.

7. Introduction to Scratch

Teaching Objectives

Students will learn about

- ☞ Starting Scratch
- ☞ Deleting a sprite
- ☞ Choosing a backdrop
- ☞ Full screen mode
- ☞ Quitting the project
- ☞ Choosing a sprite
- ☞ Resizing the sprite
- ☞ Scratch blocks
- ☞ Saving the project

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that Scratch is a block-based programming language.

Demonstrate the steps to start Scratch 2.0.

Make the students understand the features of Scratch.

Familiarize the students with the various components of Scratch window covering Sprite, Stage, Blocks, Color Palette, Scripts Area, Duplicate, Delete, Grow, Shrink, Green Flag, Stop button and Menu bar.

Show to the students the steps to:

- Choose a sprite from the Library
- Delete a sprite
- Resize a sprite

Make the students recall backdrop as background of the stage.

Tell the students the steps to change the backdrop in Scratch.

Introduce Scratch blocks as puzzle-piece shapes that are used to create code in Scratch.

Introduce Motion Blocks for changing placement, direction, rotation and movement of sprites.

Tell the students the method of identifying Motion Blocks which are colour coded as blue.

Demonstrate the use of Motion Blocks by developing My First Script.

Explain the use of Events Blocks as used to sense events that run the script and their identifying colour code as brown.

Share the use of Control Blocks as used to control the scripts and their identifying colour code as gold.

Tell the students about the use of Sound Blocks as used to control sound, its playback and volume and their identifying colour code as pink.

Help the students in developing My Second Script.

Make the students aware about the full screen mode available in Scratch.

Show to the students the steps to:

- Save a Scratch project
- Quitting the project

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. What are the features of Scratch?

Q. Name the various components of Scratch window.

Q. Define Sprite / Stage / Scripts Area / Green Flag / Stop button.

Q. Which buttons icons are used to resize a sprite?

Q. What is a backdrop in Scratch?

Q. What are Scratch blocks?

Q. What is the use of Motion / Events / Control / Sound blocks?

Q. What is the colour code for Motion / Events / Control / Sound blocks?

Q. What are the steps to save a project in Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 80 and 81 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 81 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 82 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 develop the story of thirsty crow in Scratch.

8. AI-Enabled Devices

Teaching Objectives

Students will learn about

- ☞ Smartphones
- ☞ Smartwatch
- ☞ Chatbot
- ☞ Smart TV
- ☞ Driverless Car
- ☞ Smart Doorbell
- ☞ Smart Speakers

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Explain the meaning of AI enabled devices to the students with proper and simple examples.

Tell the students what is AI which around us and what is the purpose of this in real life in simple words.

Define the following to the students:

- Smartphones
- Smartwatch
- Chatbot
- Smart TV
- Driverless Car

- Smart Doorbell
- Smart Speakers
- Relate all these to their daily life routine.

Extension

Ask the students some oral questions based on this chapter.

Q. Define the following:

- Smartphones
- Smartwatch
- Chatbot
- Smart TV
- Driverless Car
- Smart Doorbell
- Smart Speakers

Evaluation

After explaining the chapter, let the students do the exercises given on Page 85 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Page 86 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 86 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 research about more smart devices around them.