TOUCHPAD

PLUS Ver. 3.2

2

Teacher's Manual

Extended Support for Teachers

ORANGE
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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 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

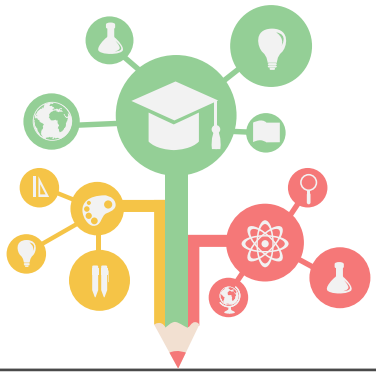
Age 11 - 20 Years

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



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

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

During the class

Present the lesson plan.

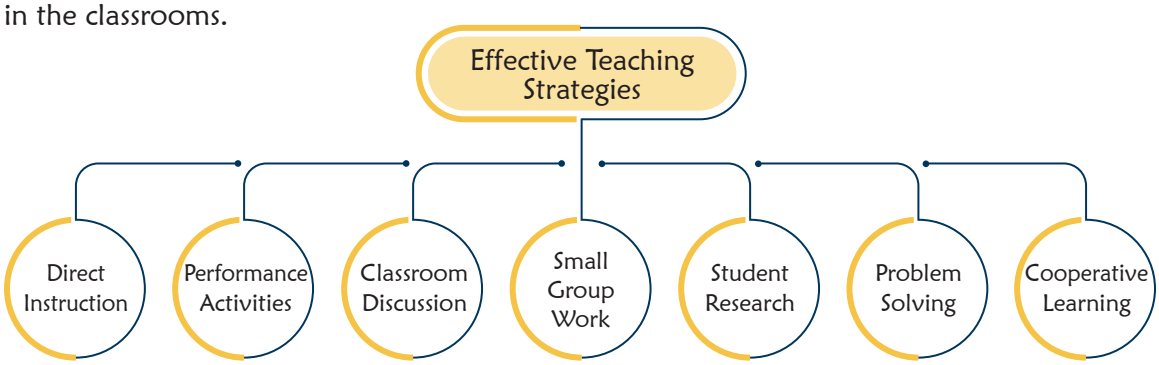
After the class

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

"Knowing yourself is the beginning of all wisdom."

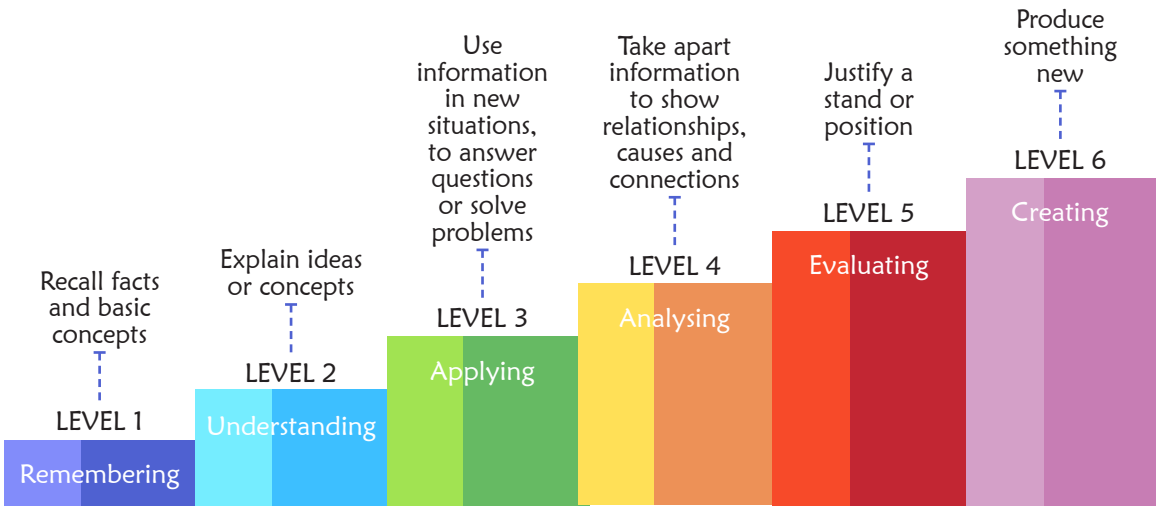
Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



Bloom's Taxonomy

Bloom's Taxonomy was created by Dr Benjamin Bloom and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

> "If you have no confidence in self, you are twice defeated in the race of life."

CLASS 2

LESSON PLAN

1 Know Your Computer

Teaching Objectives

Students will learn about

- Features of a Computer
- Uses of a Computer
- Input
- Output
- Types of Computers
- Working of Machines
- Process

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a computer is an electronic machine which helps us to solve many problems.

Tell them that the word 'computer' has been derived from the word 'compute' which means 'to calculate'.

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

Make the students understand that there are certain things which man can do better than computers covering:

- Feelings – computer does not have feelings and does not understand emotions
- Instruction – computer cannot work without our instructions
- Decision – computer cannot take its own decisions

Explain to the students about the different types of computers covering:

- Desktop computer – kept on desk or table
- Laptop computer – can be kept on lap also and is portable

- Tablet computer – smaller than a laptop and has a touchscreen
- Smartphone – mobile phone which has computer facilities

Tell the students that all these types of computers are called Personal Computers or PCs.

Share with the students the various uses of a computer covering drawing, painting, doing homework, doing sums, watching movies, listening to music, playing games, writing letters and stories, etc.

Tell the students about the working of some machines like:

- Washing machine: Clothes go in dirty and come out clean.
- Juicer: Fruits go in, juice comes out.
- Computer: "Input: 2, 3, + | Process: 2 + 3 | Output: 5"

Share with the students that this cycle of working of machines is called Input-Process-Output cycle or IPO cycle.

Tell the students about Input devices, the devices that are used to enter data into a computer.

Tell the students that keyboard and mouse are used as input devices in a computer.

Introduce the term Processing Device as the device that works on the input.

Tell the students that Central Processing Unit (CPU) is processing device of a computer and is called Brain of the computer.

Introduce the term Output Devices as the devices which help us to get the results.

Tell the students that monitor and printer are used as output devices in a computer.

Ensure that the scope of Teacher's Notes 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 computer?

Q. How has the word 'computer' been derived?

Q. State any two features of a computer.

Q. Name any two types of computers.

Q. Which is the largest type of computer?

Q. Which is the smallest type of computer?

Q. Name any two Input and Output devices.

Q. What is the brain of the computer?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 14 and 15 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 16 and 17 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 17 in the main course book. This will enhance the ability of the students and serve as a Collaboration and Technology Literacy activity.

Suggested Activity

Show the pictures of different types of computers to the students and ask the name of each type of computer.

2 Computer Devices

Teaching Objectives

Students will learn about

- Input Devices
- Storage Devices
- Output Devices

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that a computer is made up of many devices which are categorized as input devices, output devices and storage devices.

Introduce input devices as the parts that are used to give commands or instructions to the computer or tell the computer what to do.

Share with them pictures / models of some input devices like:

- Keyboard – used for typing text and numbers through keys
- Mouse – used for drawing pictures and selecting objects through click
- Scanner – used to send document or images from paper to computer
- Microphone – used to record voice, music and sounds.

Introduce output devices as the parts that are used to show result or output after processing.

Share with them pictures / models of some output devices like:

- Monitor or Visual Display Unit (VDU) – used to show the data that is input and its result after computer process through its front portion, screen.
- Printer –used to print the work done by computer on paper

Tell the students about the types of printers as Inkjet printers and Laser printers.

- Speakers – used to listening to music, sound and voice on a computer
- Headphones – work as small speaker and used to hear sound without disturbing others
- Headset – used as a combination of microphone and headphones

Introduce storage devices as the parts that are used to store our work in the computer.

Share with them pictures / models of some storage devices like:

- Hard Disk – rectangular in shape and fixed inside the CPU box
- Compact Disc (CD) – circular in shape and portable storage device
- Digital Versatile Disc (DVD) – circular in shape but with more storage capacity than CD
- Pen Drive or USB Flash Drive –having more storage capacity than DVD but less than Hard Disk

Show to the students CD/DVD Drive and USB ports used to read the files stored in CD/DVD and Pen Drive respectively.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What are the parts of a computer?

Q. What are input / output / storage devices?

Q. Give two examples of input / output / storage devices.

Q. What is a USB port used for?

Q. What is the name given to the combination of microphone and headphones?

Q. Explain CD / DVD.

Q. Which has more storage capacity: CD or DVD?

Q. Arrange in increasing order of storage capacity:

- ExplainCD
- DVD
- Pen Drive
- Hard Disk

Evaluation

After explaining the chapter, let the students do the exercises given on Page 23 to 25 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 25 and 26 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 26 in the main course book. This will enhance the ability of the students and serve as a Information Literacy and Technology Literacy activity.

Suggested Activity

Ask the students to collect information about a modern storage device – Blue Ray Disc which looks like a CD/DVD but has much more storage capacity than the two.

3 Keyboard and Mouse

Teaching Objectives

Students will learn about

- Keyboard
- Mouse

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that keyboard is used to write on computer screen.

Make the students count that a computer keyboard has 104 keys.

Tell the students that the keys on a keyboard are divided into three categories:

- Alphabet keys – 26 in number (A to Z)
- Number keys – 10 in number (0 to 9)
- Special keys – Enter, Spacebar, Backspace, etc.

Make the students understand that the alphabet keys (A to Z) on the keyboard are also used to write in small letters (a to z).

Share with the students that the number keys are used to type numbers and there are two sets of number keys on a keyboard.

Show to the students that there are some special keys also on the computer like:

- Spacebar key – longest key at the bottom, used to give blank space between letters and words.
- Enter key – also called Return key, two in number, used to move to the next line.
- Backspace key – used to erase what we have typed.
- Delete key – used to erase letters and numbers.
- Arrow key – Show to the students the four arrow keys (up, down, left and right) on the keyboard, used to move the cursor.
- Shift key – used with the other keys for different purposes.

Make the student understand that the Special symbols like !, @, #, and others are located above the number keys, accessible with Shift.

Share with the student that the keyboard has 12 function keys, from F1 to F12, at the top of the keyboard, each serving a unique purpose.

Tell the student some other keys like:

- Caps Lock key – used to type letters in capitals.
- Tab key – moves the cursor forward several spaces.
- Escape key – located at the top-left corner, cancels a task.

Show to the students that the small arrow moving on the screen is called pointer.

Make the students understand that there are types of computer mouse:

- Optical mouse – uses an LED sensor to move the pointer, glowing red when lifted.
- Wireless mouse – it has no wire. It runs on batteries.

Show to the students that features:

- Clicking – by pressing mouse buttons
- Single-clicking or Clicking – pressing and releasing left button quickly, used to select an icon.
- Double-clicking – pressing and releasing the left button twice quickly, used to open a program.
- Right-clicking – pressing and releasing the right button quickly, used to display a shortcut menu.
- Drag – moving the mouse while keeping the left button pressed, use to move objects on screen.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Name the two commonly used input devices.

Q. How many keys are there on a standard keyboard?

Q. State one use of Shift key.

Q. What is Escape / Tab / Caps Lock key used for?

Q. How many Shift / Function keys are there on a keyboard?

Q. What is the use of Function / Symbol keys?

Q. What is a mouse?

Q. What is pointer?

Q. What is single-click / double-click / right-click / drag used for?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 34 to 36 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 36 and 37 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 Pages 37 and 38 in the main course book. This will enhance the ability of the students and serve as a Information Literacy activity.

Suggested Activity

Ask the students to draw a keyboard on an A4 sheet of paper and label these keys:

Ask the students to draw a picture of a mouse representing single-click, double click, right-click, drag.

- Shift keys
- Enter key
- Escape key
- Tab key
- Symbol keys
- Function keys
- Keys to spell the name of the student

4 Operating a Computer

Teaching Objectives

Students will learn about

- How to Start a Computer
- How to Shut Down a Computer

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that we need to follow proper steps to switch on and shut down a computer.

Share with the students the steps to switch on a computer as:

1. Switch on main power supply button
2. Switch on UPS (invertor of the computer) button
3. Switch on power supply button of CPU
4. Switch on monitor

Explain to the students that:

- The first screen that appears on the monitor is called desktop.
- Small pictures on the desktop are icons.
- The Launcher on the left side of the screen lets you quickly open apps and includes a Show Apps button.

- Clicking the Show Apps button opens a menu to access different programs.
- Rectangular box that opens when we start a program is called Window.
- Control buttons on every window include Maximize and Minimize buttons to resize the window and Close button to close the window.

Share with the students the steps to shut down a computer as:

1. Click on Start Power button.
2. Select Power Off.
3. Switch off monitor button.
4. Switch off UPS button.
5. Switch off main power supply button.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is the first step to switch on a computer?

Q. What is the first step to shut down a computer?

Q. What is the last step to shut down a computer?

Q. What are icons?

Q. Which part is called invertor of the UPS?

Q. Do we need to switch off the CPU button while shutting down a computer?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 44 and 45 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 46 and 47 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 Critical Thinking and Technology Literacy activity.

Suggested Activity

Ask the students to draw images showing the steps to switch on a computer and to shut down a computer in their computer notebook.

5 Fun with Tux Paint

Teaching Objectives

Students will learn about

- New Tool
- Stamp Tool
- Magic Tool
- Open Tool
- Text Tool

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that Tux Paint has a lot of tools, animations and effects to enhance your creativity in drawing.

Tell the students that the Tux mascot, that is, a penguin guides you while working in Tux Paint.

Make the students recall the components of the Tux Paint window covering Toolbox, Colors Palette, Help Area, Selector, Up and Down Arrows and Drawing Area or Canvas.

Introduce New tool as the tool used to open a new page for drawing.

Demonstrate to the students the steps involved in use of New tool.

Make the students understand that Open tool is used to open an existing drawing in Tux Paint.

Show to the students the method to use Open tool.

Introduce Stamp tool as the tool used to insert different stamps or images from the Selector.

Explain the steps involved in the use of Stamp tool to the students.

Tell the students that just like in Paint, Text tool is used in tux Paint to type some text in the drawing area or canvas.

Demonstrate to the students the steps involved in using Text tool in Tux Paint.

Tell the students that Magic tool in Tux Paint is used to add special effects to a drawing.

Show to the students some of the Magic tool effects which can be added to a drawing.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Text / Magic / Stamp / New / Open tool?

Q. When is New tool used?

Q. Can Open tool be used to open a drawing which was not saved earlier?

Q. What is the use of Selector in Tux Paint?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 55 and 56 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 56 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 57 in the main course book. This will enhance the ability of the students and serve as a Creativity activity.

Suggested Activity

Ask the students to draw a jungle scene in Tux Paint.

6 Reasoning and Analysis

Teaching Objectives

Students will learn about

- Number Pyramids
- Directions
- Number Grid

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Introduce Number Pyramids to the students in details with the help of pictures or charts.

Tell the students about the Number Grid. Also tell them how solve by giving some examples which will improve their understanding of the topic.

Show the students what is direction and identify it with the help of analysis.

Show examples for all the topics for better clarity of the lesson at the end.

Ensure that the scope of Teacher's Notes 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 number pyramid?

Q. What is a grid?

Q. What is a number grid?

Q. What is a direction?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 60 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 60 and 61 in the main course book.

Suggested Activity

Ask the students to practice to identify directions.

7 More on Google Blockly Games

Teaching Objectives

Students will learn about

- Bird Game
- Turtle Game

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that they will learn about next games in Blockly.

Introduce to the students with Bird game and tell them about its uses.

Demonstrate the steps involved to play the Bird game.

Explain the students about the Turtle game and the uses of this game.

Tell the steps involved to play this game.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Which game uses Rotate the pen?

Q. What does Bird game teaches?

Q. What are the uses of Bird game?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 69 and 70 of the main course book as Exercise. Tell the students to try different activities under Mind Boggler given on Page 71 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 71 in the main course book. This will enhance the ability of the students and serve as a Creativity and Technology Literacy activity.

Suggested Activity

Create a bird game and move to left to right direction.

8 Artificial Intelligence Around Us

Teaching Objectives

Students will learn about

- Artificially Intelligent Machines
- AI Around Us
- Robots

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Explain the meaning of Artificially Intelligent machines to the students with proper and simple examples.

Tell the students AI and AI around us.

Define the following to the students:

- Voice Assistant
- Face Detection
- Navigation

Explain the meaning of Robots to the students with their role around us with examples.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define the following:

- Voice Assistant
- Face Detection
- Navigation

Q. What is a robot?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 75 in the main course book as Checkpoint. Tell the students to try activity under Mind boggler and Hands-On given on page 76 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 76 in the main course book. This will enhance the ability of the students and serve as a Creativity and Technology Literacy activity.

Suggested Activity

Ask the students to practice more in Quick Draw.