TOUCHPAD

PLUS Ver. 3.2

1

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Periods / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										

Development Milestones in a Child

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

Age
5 - 8 Years

Physical	• First permanent tooth erupts • 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

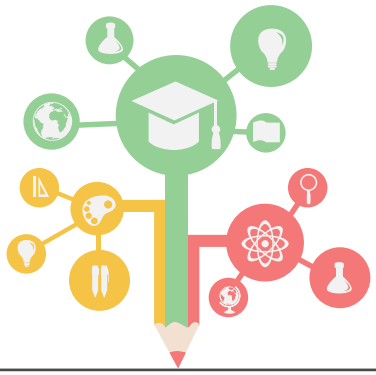
Age 11 - 20 Years

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.

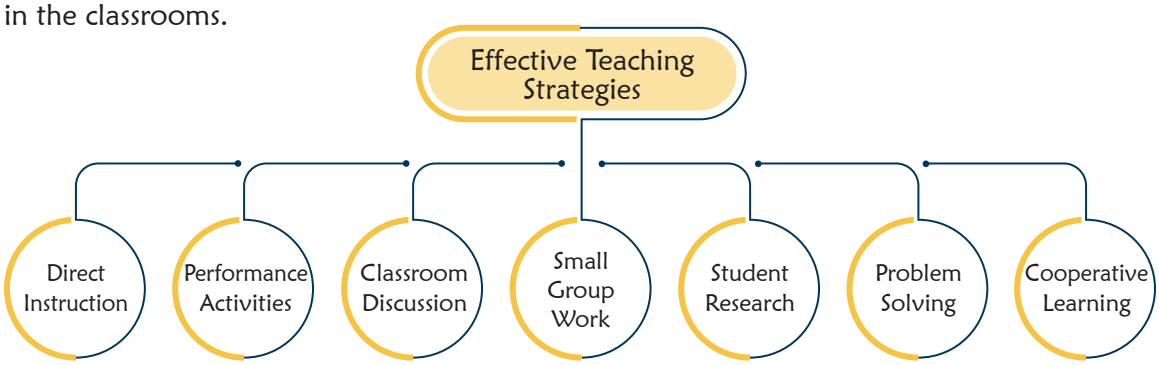
After the class

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

"Knowing yourself is the beginning of all wisdom."

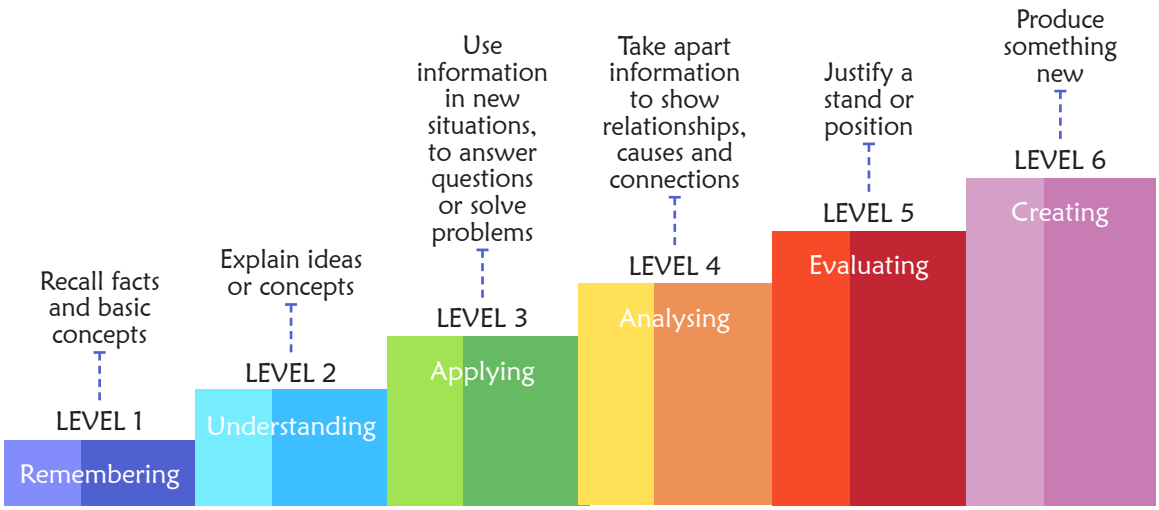
Teaching Strategies

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 1

LESSON PLAN

1 Computer–A Wonderful Machine

Teaching Objectives

Students will learn about

- ★ Natural and Human-made Things
- ★ What are Machines?
- ★ Computer—A Wonderful Machine
- ★ How is a Computer Different from other Machines?
- ★ Features of a Computer
- ★ Functions of a Computer
- ★ What Computer Cannot do?

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that the picture given is of a computer.

Tell them that computer is a machine.

Encourage the students to name some things which they see around themselves.

Make them understand some of these things are natural like sun, moon, star, mountains, cat, dog, tree, boy, girl, etc. The other things are Human-made like chair, table, TV, fan, pencil, eraser, board, building, washing machine, mobile, etc.

Explain to the students that machines are made by human.

Give examples of some machines around us like air conditioner, refrigerator, washing machine, television, mobile phone, car, etc. and their use.

Share with them that computer is also a machine.

Tell them the various things we can do with the computer like doing sums, drawing, listening to music, watching movies, learning, etc.

Encourage them to tell why computer is different from other machines (other machines can only do the work for which they are made but computer can do many kinds of work).

Explain to the student features of a computer.

Tell the student function of a computer. It can do a lot of things for you.

Share with student that what computers cannot do?

Introduce the student some computer have different shapes and sizes.

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. Is computer a machine?

Q. Name some natural things.

Q. Name some human-made things.

Q. Who makes machines?

Q. Are machines natural?

Q. What is the use of air conditioner / refrigerator / washing machine / television / mobile / car?

Q. What does a computer need to run?

Q. How is computer different from other machines?

Q. Write two features of Computer.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 14 to 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 to 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 creativity activity.

Suggested Activity

Ask the students to prepare a comparative table on chart paper comparing different groups of hardware on various parameters with the help of examples and pictures/drawings.

2 Places where Computers are used

Teaching Objectives

Students will learn about

- ★ At Home
- ★ In Schools
- ★ In Offices and Banks
- ★ In Hospitals
- ★ In Shops
- ★ At Railway Stations and Airports

Number of Periods	
Theory	Practical
1	1

Teaching Plan

While teaching this chapter, tell the students that computers are used in different places for different kinds of works.

Tell the students why computer is used:

- At home (watch movies, play games, make school projects, online shopping, etc.)
- In schools (store student records, library books record)
- In offices (maintain records)
- In banks (keep record of money)
- In hospitals (make medical reports, controlling machines while doing surgeries)
- In shops (make bills, storing details of items)
- At railway stations and airports (book tickets, record of passenger information, information about arrival and departure of trains and airplanes.

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. Are computers used only in schools and at homes?

Q. Name two places other than home and school where computers are used.

Q. Why do we use computers at home / in schools / at railway stations / in shops / in offices and banks / in hospitals?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 21 and 22 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 22 and 23 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 23 in the main course book. This will enhance the ability of the students and serve as a Productivity & Accountability activity.

Suggested Activity

Ask the students to discuss with their parents the use of computers for:

- Controlling movement of metro trains
- Launching satellites
- Weather forecasting
- Making robots
- Making animations
- Booking tickets for movies
- Video game parlours

3 Parts of a Computer

Teaching Objectives

Students will learn about

- ★ Monitor
- ★ CPU
- ★ Mouse
- ★ Keyboard
- ★ Other Parts of a Computer

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that just as our body has different parts like hands, eyes, brain, etc. similarly, a computer also has various parts.

Tell the students that a computer has four main parts:

- Monitor – also called Visual Display Unit (VDU), looks like a television, used to see pictures, games, cartoons, alphabet, numbers and words.
- CPU – stands for Central Processing Unit, fixed inside CPU box, called brain of the computer, most important part of the computer.
- Mouse – device with long wire, two buttons and scroll wheel, used to draw pictures.
- Keyboard – has small buttons called keys, used for typing numbers and letters.

Share with the students that a computer has some other parts also like:

- Speakers – attached to computer, used to hear sounds and music stored in computer.
- Headphones - attached to computer, used to hear sounds and music stored in computer without disturbing others.
- Printer – used to print text and images on paper.
- Compact Disc (CD) and Pen Drive – called storage devices and used to save data.

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 four main parts of a computer.

Q. What is the use of Monitor / Mouse / keyboard /CPU?

Q. What does CPU stand for?

Q. What is the other name of a monitor?

Q. Expand VDU.

Q. Where is CPU fixed?

Q. Name some other parts of a computer.

Q. What is the difference between speakers and headphones if both are used to hear sounds?

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

Q. Name two storage devices.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 28 to 30 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 30 and 31 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 31 in the main course book. This will enhance the ability of the students and serve as a Collaboration activity.

Suggested Activity

Ask the students to paste pictures of different parts of a computer in their computer notebook and write their names.

4 Keyboard and the Mouse

Teaching Objectives

Students will learn about

- ★ Keys on the Keyboard
- ★ Alphabet Keys
- ★ Number Keys
- ★ Special Keys
- ★ What is a Cursor?
- ★ Mouse
- ★ Types of a Mouse
- ★ How to hold a Mouse
- ★ How to use a Mouse

Number of Periods	
Theory	Practical
3	2

Teaching Plan

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

Tell the students that a keyboard has small buttons on it called keys.

Make the students count that a computer keyboard has 101 to 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.

Show to the students the position of various categories of keys on the keyboard.

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.
- Cursor Control keys – Show to the students the four arrow keys (up, down, left and right) on the keyboard, used to move the cursor.

Show to the students the small blinking line called cursor.

Make the students understand that the cursor shows the place where the typed letters will appear.

Tell the students that a mouse helps us to tell the computer what to do.

Tell the student about the various uses of a mouse.

Make the students understand that computer mouse:

- Two-buttoned mouse – has two buttons – left button and right button.
- Scroll mouse – has two buttons (left and right) and a scroll wheel.

Show to the students the correct way of holding the mouse with reference to the position of fingers and palm (shown in the main course book).

Show to the students that a computer mouse can be used for:

- Pointing – by moving the pointer
- 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.
- Dragging – 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. What are the small buttons on a keyboard called?

Q. How many keys are there on a keyboard?

Q. What are alphabet / number keys used for?

Q. How many sets of number keys are there on the keyboard?

Q. What is the use of Enter / Spacebar / Backspace key?

Q. Name some special keys.

Q. How many cursor control keys are there?

Q. What is a cursor?

Q. What is a mouse used for?

Q. Which finger must be placed on left button / right button?

Q. Which finger must be used to scroll the wheel?

Q. Which fingers must be used to hold the sides of the mouse?

Q. Define pointing / clicking / dragging.

Q. What is the meaning of single-click / double-click / right-click?

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

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 39 to 41 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 41 and 42 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 43 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy and Information Literacy activity.

Suggested Activity

Ask the students to paste a picture of computer keyboard in the computer notebook and label Number keys, Alphabet keys, Enter keys, Spacebar key, Backspace key and Cursor Control keys on it.

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

5 Introduction to Tux Paint

Teaching Objectives

Students will learn about

- ★ Steps to Start Tux Paint
- ★ Tools of Tux Paint

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that Tux Paint is a freehand drawing program designed for young children.

Demonstrate the steps involved in starting Tux Paint to the students.

Show to the students the Welcome Screen of Tux Paint with penguin as the mascot.

Familiarize the students with the window of Tux Paint showing the position and explain the use of Toolbox (contains drawing tools), Drawing Canvas (drawing and colouring space), Colors Palette (contains color choices), Selector (to select desired shapes) and Help area(gives tips and details of the selected tool).

Tell the students about basic tools of Tux Paint covering:

- Paint Tool – used to draw different freehand shapes
- Shapes Tool – used to draw predefined shapes like circle, rectangle, square, triangle, etc.
- Eraser Tool – used to erase unnecessary parts of drawing
- Lines Tool – used to draw straight lines
- Quit Tool – used to come out of Tux Paint program

Demonstrate to the students the use of these tools.

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 Tux Paint?

Q. Name some parts of Tux Paint window.

Q. What is the use of Toolbar / Drawing canvas / Selector / Colors Palette?

Q. Name some tools of Tux Paint.

Q. What is the use of Paint /Lines / Shapes / Eraser / Quit Tool?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 51 and 52 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 52 and 53 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 53 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 redraw the shapes drawn in Paint earlier in Tux Paint also.

6 Reasoning and Critical Thinking

Teaching Objectives

Students will learn about

- ★ Shapes
- ★ Pattern
- ★ Word Search

Number of Periods	
Theory	Practical
1	1

Teaching Plan

While teaching this chapter, tell the students that You have often observed various objects.

Introduce Shapes to the students in details which are:

- Square
- Rectangle
- Triangle
- Circle

Tell the students about what pattern is and to identify one. Also, tell them how solve by giving some examples which will improve their understanding of the topic.

Show the students what is a word search and how to solve it with the help of critical thinking.

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 shape?

Q. How many shapes are there?

Q. What is a pattern?

Q. What is a word search?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 57 in the main course book as Checkpoint. Tell the students to try different activity under mind blogger and Hands-On given on Pages 58 and 59 in the main course book.

Suggested Activity

Ask the students to practice any lesson two times and compare their result.

7 Google Blockly Games

Teaching Objectives

Students will learn about

- ★ Starting Blockly
- ★ Puzzle Game
- ★ Maze Game

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that Google Blockly is a tool that helps the users to learn block-based programming quickly and easily, in this blocks are dragged and dropped to give instructions.

Tell the students that it is also known as a play-way programming platform where users play games and learn programming simultaneously.

Demonstrate the steps to start Blockly.

Explain the students about the Puzzle game that teaches to:

- join the blocks.
- create stack of blocks.
- change instructions in the variable blocks.
- placing stack of blocks inside a container block.

Demonstrate the steps to play the Puzzle game to the students.

Explain the students about the Maze game that teaches to:

- join the blocks.
- create loops or blocks to repeat actions.
- change instructions in the variable blocks.
- placing stack of blocks inside a container block.

Demonstrate the steps to play the Maze game to the students.

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 Puzzle / Maze game?

Q. What does Puzzle / Maze game teaches the user?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 66 to 68 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 68 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 69 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Create a Puzzal game.

8 Introduction to Artificial Intelligence

Teaching Objectives

Students will learn about

- ★ Natural and Artificial Things
- ★ Natural Intelligence
- ★ Artificial Intelligence

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Introduce the students with the concept of Natural and Artificial Things. Also, tell them the difference between these two.

Explain the meaning of Natural Intelligence to the students with proper and simple examples.

Tell the students what is Artificial Intelligence and what is the purpose of this in real life in simple words.

Define the following to the students:

- Artificially Intelligent Devices
- AI Toy
- AI Machines in Factories

Relate all these to their daily life routine.

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 natural thing?

Q. What is artificial thing?

Q. What is natural intelligence?

Q. What is artificial intelligence?

Q. Define artificially intelligent devices.

Q. What is an AI toy?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 73 in the main course book as Checkpoint. Tell the students to try different activity under Hands-On given on Page 74 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 75 in the main course book. This will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

Ask the students to practice more shapes in AutoDraw.