TOUCHPAD

Ver. 2.2

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

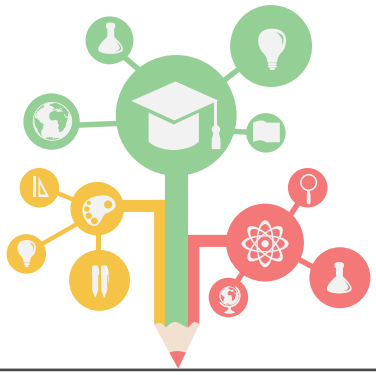
Age 11 - 20 Years

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.

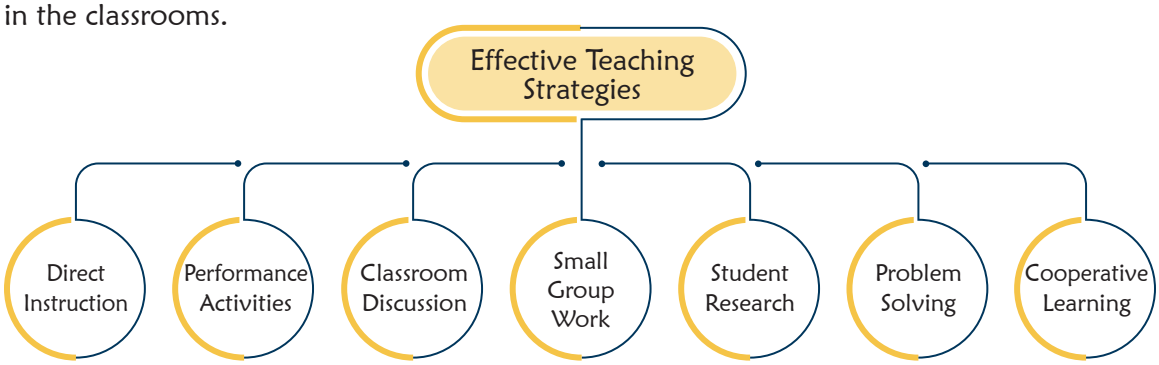
After the class

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

> "Knowing yourself is the beginning of all wisdom."

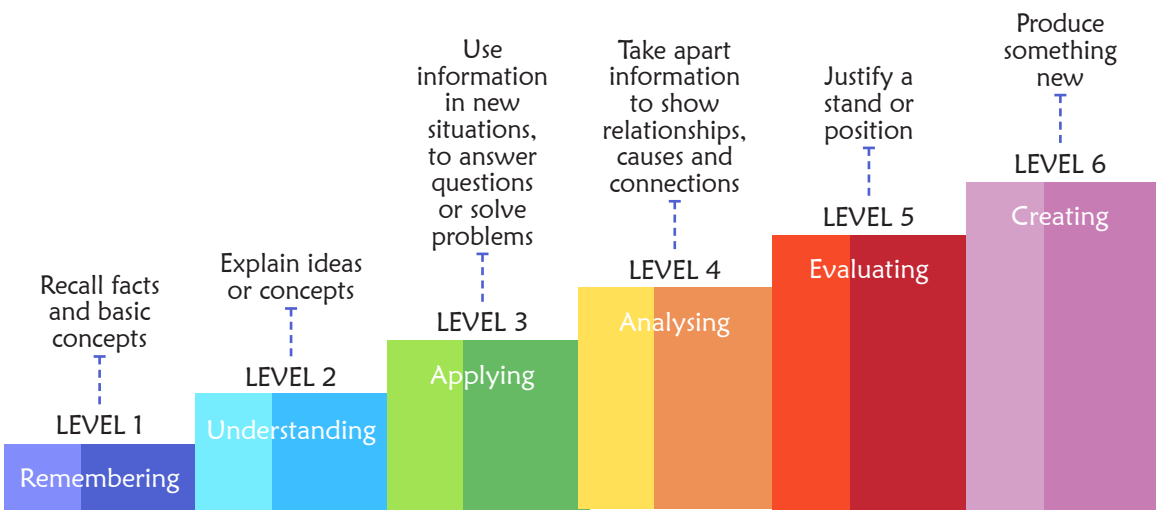
Teaching Strategies

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 Smart Machine

Teaching Objectives

Students will learn about

- Natural and Human-Made Things
- Machine
- Computer—A Wonderful Machine Uses of a Computer
- Places where Computers are used

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 7 of the main course book.

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 man-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 refrigerator, air conditioner, television, mobile, car, etc. and their use.

Share with them that computer is also a human-made machine.

Tell them the various things we can do with the computer like solving sums, drawing pictures, 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).

While teaching this chapter, tell the students that computer is a human-made machine and makes our work faster and easier.

Tell the students about various functions of a computer, covering:

- type letters, words and sentences.
- calculate sums.

- draw and colour images.
- play games.
- watch cartoons and movies.
- play songs.

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

Tell the students computer is used:

- at home to watch movies, play games, make school projects, online shopping, etc.
- in schools to store student records, library books record.
- in offices to maintain records.
- in banks to keep record of money.
- in hospitals to make medical reports, controlling machines while doing surgeries.
- in shops to make bills, storing details of items.

Ask the students to solve the exercise **Let's Catch Up** given on pages 8 and 10.

Extension

Ask the students some oral questions based on this chapter.

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. Is computer a machine?

Q. What does a computer need to run?

Q. How is computer different from other machines?

Q. Why do we use computers?

Q. Expand the use of computer in the following places:

a. At Home b. In School c. In Bank

d. In Hospitals e. In Offices f. In Shops

Evaluation

After explaining the chapter, let the students do the exercises given on Page 15 in the main course book as **Test Your Skills**.

Tell the students to try sections under **Tech Zone–Let's Solve**, **Let's Explore** and **Let's Get Better** given on Page 16 in the main course book to imbibe Critical Thinking, Technology Literacy and Communication skills in them.

Suggested Activity

Ask the students to discuss with their parents and elders and learn more about why they use the computer. Encourage the students to share some more uses of computers with the class.

2 Parts of a Computer

Teaching Objectives

Students will learn about

- Main Parts of a Computer
- Other Parts of a Computer

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 17 of the main course book.

Tell the students that a computer has four main parts:

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

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

- **Printer** – used to print text and images on paper.
- **Speakers** – attached to computer, used to hear sounds and music stored in computer.

Ask the students to solve the exercise **Let's Catch Up** given on page 19.

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.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 20 in the main course book as **Test Your Skills**.

Tell the students to try sections under **Tech Zone–Let's Solve**, **Let's Explore** and **Let's Get Better** given on Pages 21 and 22 in the main course book to imbibe Critical Thinking, Creativity and Communication skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 22 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 paste pictures of different parts of a computer in their computer notebook and write their names.

3 The Keyboard and The Mouse

Teaching Objectives

Students will learn about

- Keyboard
- Mouse

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 24 of the main course book.

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

Tell the students that a keyboard has keys on it that are used to give commands to the computer.

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 followings categories:

- **Alphabet keys** – used to type letters, words and sentences.
- **Number keys** – used to type numbers.
- **Spacebar key –** used to give a blank space when we type words, letters or numbers.

- **Enter key –** used to start a new line or a paragraph.
- **backspace key and delete key –** used to delete the letter on left or right of a cursor.
- **Arrow keys –** used to move the cursor up, down, right and left.

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.

While teaching this chapter, tell the students that a mouse helps us to tell the computer what to do.

Share with the students some uses of a computer mouse.

Make the students understand that a mouse has two buttons and a scroll wheel in the centre.

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

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:

- **Single-click** – pressing and releasing left button quickly, used to select an icon.
- **Double-click** – pressing and releasing the left button twice quickly, used to open a program.
- **Scrolling** – placing the index finger on the scroll wheel and moving it up or down.

Ask the students to solve the exercise **Let's Catch Up** given on pages 25 and 29.

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. Name the categories in which the keys on a keyboard are divided into.

Q. What are alphabet / number keys used for?

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

Q. How many alphabet keys are there on the keyboard?

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

Q. What is the use of arrow keys?

Q. How many arrow keys are there?

Q. What is a cursor?

Q. What is a mouse used for?

Q. Name the two types of mouse.

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

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

Q. Define pointing / clicking / scrolling.

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

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

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 32 and 33 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve, Let's Explore** and **Let's Get Better** given on Pages 33 and 34 in the main course book to imbibe Critical Thinking, Technology Literacy and Communication skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 35 in the main course book. This will enhance the ability of the students and serve as a Collaboration activity.

Suggested Activity

Ask the students:

1. To paste a picture of computer keyboard in the computer notebook and label Number keys, Alphabet keys, Enter keys, Spacebar key, Backspace key and Arrow keys on it.
2. To draw a picture of a mouse representing single-click, double click and scrolling.

4 Tux Paint

Teaching Objectives

Students will learn about

- Starting Tux Paint
- Starting a New Drawing
- Using Paint Tool
- Saving a Drawing
- Parts of Tux Paint Window
- Colouring an Image
- Erasing a Drawing
- Closing Tux Paint

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 36 of the main course book.

While teaching this chapter, tell the students that Tux Paint is a popular program used to draw and paint on computer.

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

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

Familiarise the students with the window of Tux Paint showing the position and explain the use of:

- Toolbox
- Selector pane
- Drawing canvas
- Color palette
- Help Area

Show the students how to start a new drawing in Tux Paint.

Demonstrate the steps to fill the colour in an Image.

Demonstrate the steps of uses of the paint tool step by step.

Tell the students how to erasing a drawing using Eraser Tool.

Show to the students right way of saving a drawing in tux paint.

Explain the students about closing the Tux paint.

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 Pages 42 and 43 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve** and **Let's Explore** given on Page 44 in the main course book to imbibe Critical Thinking and Technology Literacy skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 45 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.

5 Let us Draw in Paint

Teaching Objectives

Students will learn about

- Opening Paint
- Drawing Shapes
- Saving your Drawing
- Parts of Paint Window
- Filling Colour in a Shape
- Closing Paint

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 48 of the main course book.

While teaching this chapter, tell the students that Paint is a program used to draw and colour.

Demonstrate the steps to open Paint to the students.

Familiarise the students with Paint window showing Tools group, Shapes group, Colors group and Drawing Area.

Tell the students about the uses of Tools group (contains tools), Colors group (contains colour options) and Shapes group (contains shapes).

Demonstrate the steps to:

- draw straight lines using Line shape.
- draw rectangles using Rectangle shape.
- fill colours in closed shapes using Fill with Color tool.
- draw Oval using Oval shape.

Demonstrate the steps to save a drawing to the students.

Show to the students the steps to close Paint.

Ask the students to solve the exercise **Let's Catch Up** given on page 53.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Paint?

Q. What is the use of Line / Rectangle shape?

Q. What is the use of Fill with Color tool?

Q. Under which category is the Paint program listed?

Q. Name the groups present on Paint window.

Q. What does the Colors / Shapes / Tools group contain?

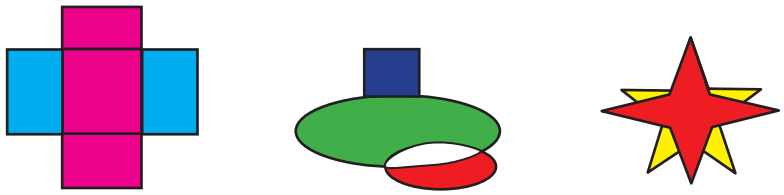
Evaluation

After explaining the chapter, let the students do the exercises given on Pages 55 and 56 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve** and **Let's Explore** given on Page 56 in the main course book to imbibe Critical Thinking and Information Literacy skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** 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 the following shapes in Paint.



6 Reasoning and Critical Thinking

Teaching Objectives

Students will learn about

- Shapes
- Word Search
- Pattern

Number of Periods	
Theory	Practical
1	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 58 of the main course book.

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.

Ask the students to solve the exercise **Let's Catch Up** given on pages 59, 61 and 62.

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 Pages 63 and 64 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve, Let's Explore** and **Let's Get Better** given on Pages 64 and 65 in the main course book to imbibe Critical Thinking and Communication skills in them.

Suggested Activity

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

7 Introduction to ScratchJr

Teaching Objectives

Students will learn about

- Advantages of ScratchJr
- Components of ScratchJr Window
- Adding a New Character
- Starting ScratchJr
- Adding Text
- Changing the Background

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on page 67 of the main course book.

While teaching this chapter, tell the students that ScratchJr is a computer program or app used to create animated stories and games.

Tell the students about the Scratchjr and their advantages.

Demonstrate the steps to start ScratchJr to the students.

Familiarise the students with components of ScratchJr window covering character, stage, green flag, blocks palette, block categories, programming area, etc.

Tell the students about adding a new text, new character and changing the background

Ask the students to solve the exercise **Let's Catch Up** given on page 70.

Extension

Ask the students some oral questions based on this chapter.

Q. What is ScratchJr?

Q. Why are blocks joined in ScratchJr?

Q. What is a character in ScratchJr window?

Q. What is the use of green flag in ScratchJr window?

Q. Name the menu of programming blocks.

Q. What is the purpose of changing the background in ScratchJr?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 73 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve** and **Let's Explore** given on Page 74 in the main course book to imbibe Critical Thinking and Creativity skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 75 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 picnic scene of their choice using ScratchJr at home.

8 Introduction to Artificial Intelligence

Teaching Objectives

Students will learn about

- Natural and Artificial Things
- Artificial Intelligence
- ☞ Natural Intelligence

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Let's Plug-in** given on Page 76 of the main course book.

While teaching this chapter, 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 artificially intelligent devices to the students:

- AI Toy
- AI Machines in Factories

Relate all these to their daily life routine.

Ask the students to solve the exercise **Let's Catch Up** given on page 77.

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 80 and 81 in the main course book as **Test Your Skills**. Tell the students to try sections under **Tech Zone– Let's Solve, Let's Explore** and **Let's Get Better** given on Page 81 in the main course book to imbibe Critical Thinking and Communication skills in them.

Take the students to the computer lab and let them practice the activity given in the **Tech Practice** section on Page 82 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.