TOUCHPAD

Play Ver. 2.1

2

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

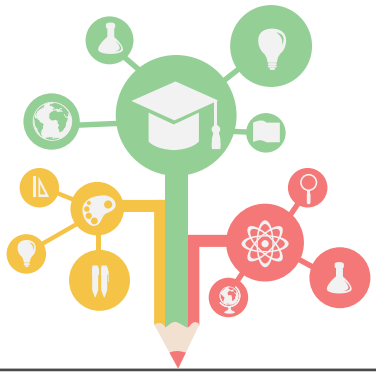
Age 11 - 20 Years

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.

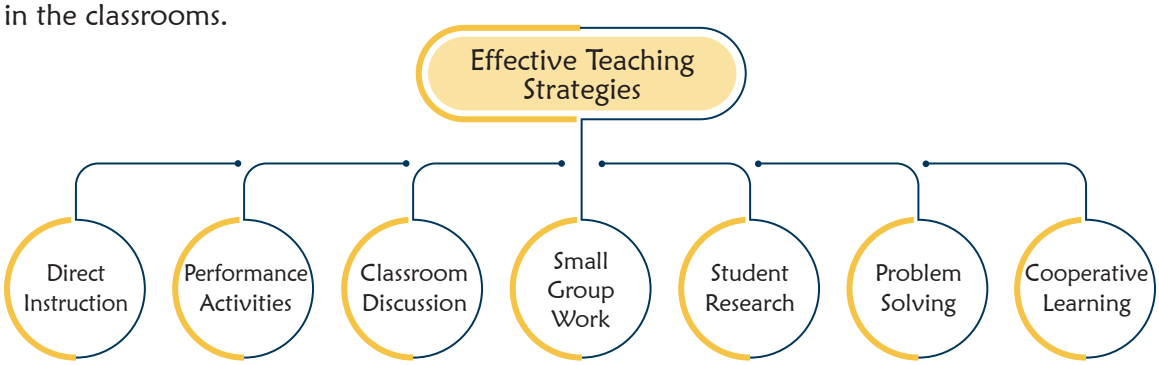
After the class

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

"Knowing yourself is the beginning of all wisdom."

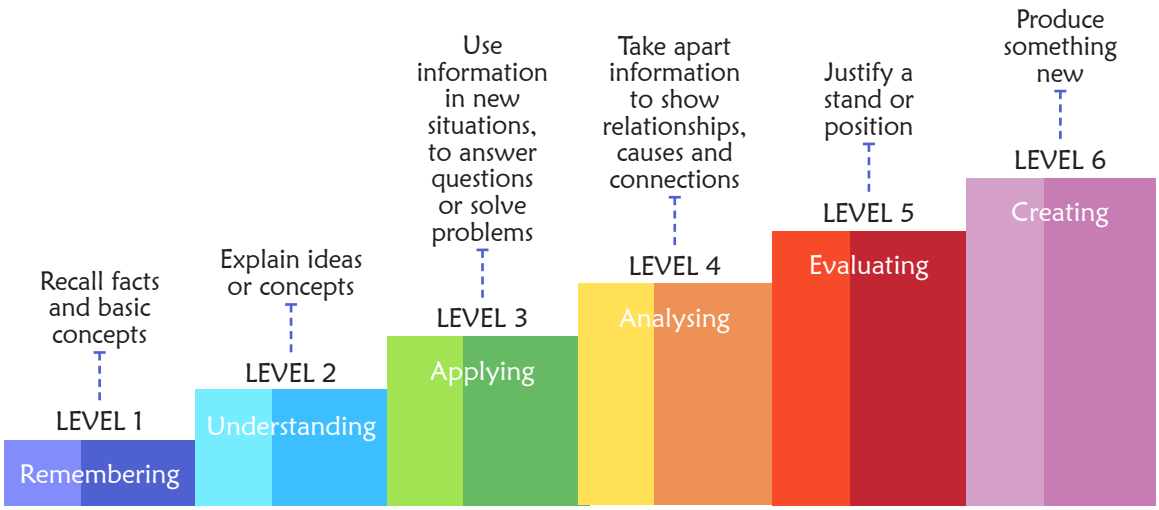
Teaching Strategies

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 2

LESSON PLAN

1 Applications of a Computer

Teaching Objectives

Students will learn about:

- Features of a computer
- 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 which helps us solve many problems.

Share with the students the features of a computer covering:

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

Make the students understand that there are certain things which a man can do but not the computer, covering:

- Feelings – A computer does not have feelings.
- Instruction – A computer cannot work without our instructions.
- Decision – A computer cannot take its own decisions.

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

- Desktop computer – It is kept on desk or table.
- Laptop – It can be kept on lap also and is portable.
- Tablet – It is bigger than a smartphone and has a touchscreen.
- Smartphone – It is a mobile phone which has computer facilities.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is a computer?

Q. State any two features of a computer.

Q. Name two things which man can do better than computers.
Q. Name any two types of computers.
Q. Can we keep all computers in our pocket?
Q. Name the computer which we can keep in our pocket.
Q. Name the computer which we keep on a desk or a table.

Evaluation

After explaining the chapter, let the students do the course book exercises given on page 11 of the main course book as **Exercise**.

Ask the students to try **Hands-On** activity given on page 12 to inculcate Creativity and Critical Thinking skills.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 12 of the main course book. It will enhance the ability of the students and will serve as a Collaboration and Information 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 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	1

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:

(i) Switch ON main power supply button.
(ii) Switch ON UPS (invertor of the computer) button.
(iii) Switch ON power supply button of CPU.
(iv) 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.
- Long bar at the bottom of the desktop is called Taskbar.
- Start button is on the left corner of the taskbar and used to open different programs.

- Start menu has Shut Down button which is used to shut down the computer.
- 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:

(i) Click on Start button.
(ii) Click on the Power button.
(iii) Click on Shut Down button and wait.
(iv) Switch OFF monitor button.
(v) Switch OFF UPS button.
(vi) Switch OFF main power supply button.

Ensure that the scope of **Teacher's Corner** section 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. Where is taskbar located?
Q. Where is Start button located on the taskbar?
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 course book exercises given on pages 16 and 17 of the main course book as **Exercise**.

Ask the students to try **Hands-On** activity given on page 17 to inculcate Creativity and Critical Thinking skills.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 18 of the main course book. It will enhance the ability of the students and will serve 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.

3 Working of a Computer

Teaching Objectives

Students will learn about:

- Working of Machines
- IPO Devices

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that the action which takes place with the inputs is known as processing and the results that we get after processing are known as output.

Tell the students that a computer works according to the commands or instructions given by us.

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

Tell the students about the working of some machines like:

- **Washing Machine** – We put dirty clothes in the washing machine. It then washes them. Finally, clean clothes come out of it.
- **Juicer** – we put fruit pieces inside it, the juicer squashes the fruits and gives out fresh juice.

Share with the students that in both these cases, the first step is input, the second step is process and the third step is output.

Introduce the term Devices as the parts made for a computer.

Introduce Input Devices as the devices that are used to enter data into a computer.

Let the students know 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 Corner** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What does IPO stand for?

Q. What is Input-Process-Output cycle?

Q. Define Input.

Q. Define Process.

Q. Define Output.

Q. Name two input devices.

Q. Name two output devices.

Q. Which part of the computer is called brain of the computer?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 23 and 24 of the main course book as **Exercise**.

Ask the students to try **Hands-On** activity given on page 25 to inculcate Creativity skills.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 25 of the main course book. It will enhance the ability of the students and will serve as a Communication and Technology Literacy activity.

Suggested Activity

Show some more machines with input and output to the students and ask the students to arrange these in correct order of the IPO cycle.

4 Keyboard and Mouse

Teaching Objectives

Students will learn about:

- Special Keys
- Mouse Pointer Shapes
- Functions of Mouse

Number of Periods	
Theory	Practical
1	1

Teaching Plan

While teaching this chapter, tell the students that a keyboard and mouse are the input devices that are used to give input data to the computer.

Tell them that a standard keyboard has 104 keys.

Tell them that Special keys are used to perform special functions. Those are:

- Caps Lock Key
- Backspace Key
- Shift Key
- Symbol Keys
- Enter Key
- Cursor Control Keys
- Ctrl and Alt Key

Demonstrate the functions of a mouse to the students. The various functions of a mouse are:

- Single-click or Click
- Right-click
- Drag and Drop
- Double-click
- Scroll

Teach them that the shape of the mouse pointer changes according to the actions we perform.

Ask the students to read the **Techfunda** given on page 27.

Ask the students to do **Periodic Assessment-2** and **Test Sheet-1** given on pages 33 and 34.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What are the special keys?

Q. Define symbol keys.

Q. Which function of mouse helps us to see the properties of an item?

Q. Which shortcut keys are used to close any program?

Q. Name the different types of special keys.

Q. Which key is used to type capital letters?

Q. Define the term 'drag'.

Evaluation

After explaining the chapter, let the students do exercises given on pages 31 and 32 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **IN THE LAB** section on page 32 in the main course book. This will enhance the abilities of the students and serve as a Technology Literacy Activity.

Suggested Activity

Ask the students to type 5 lines about themselves in MS word.

5 Tools of Tux Paint

Teaching Objectives

Students will learn about:

- New Tool
- Text Tool
- Open Tool
- Stamp Tool
- Save Tool

Number of Periods	
Theory	Practical
1	2

Teaching Plan

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

Explain the steps and uses of tools of Tux Paint to the students.

Make them understand the main components of the Tux Paint window. Those are:

- Toolbox
- Help Area
- Selector Pane
- Colors Palette
- Drawing canvas
- Up and Down Arrows

Tell them about the various tools of Tux Paint. Those are:

- New Tool
- Text Tool
- Open Tool
- Stamp Tool
- Save Tool

Extension

Ask the students some oral questions based on this chapter.

Q. Which is known as easy to use program?

Q. Which tool is used to open a new page?

Q. Which tool is used to paste the ready-made pictures on the drawing canvas?

Q. What is a Tux Paint?

Q. Which is used to open the existing drawings?

Evaluation

After explaining the chapter, let the students do exercises given on pages 38 and 39 of the main course book as **Exercise**.

Ask the students to try **Hands-On** activity given on page 39 to inculcate Creativity and Critical Thinking skills.

Take the students to the computer lab and let them practice the activity given in the **In the Lab** section on page 40 in the main course book. This will enhance the abilities of the students and serve as a Creativity and Technology Literacy Activity.

Suggested Activity

Ask the students to draw a colorful scenery on Tux Paint using various tools of their choice.

6 Fun with Paint

Teaching Objectives

Students will learn about:

- Drawing Freehand
- Components of Paint Window
- Foreground and Background Color
- Text Tool
- Filling Colours
- Drawing Shapes
- Color Picker Tool
- Opening an Existing Drawing

Teaching Plan

Number of Periods	
Theory	Practical
1	2

While teaching this chapter, tell the students that Paint is a program that c
paint on the computer.

Tell the students that Paint allows us to draw freehand using Brushes and Pencil tool.

Teach the students the steps to fill colours in a closed shape or figure.

Make them understand the components of the Paint window. Those are:

- Tab
- Ribbon
- File Tab
- Tools Group
- Drawing Area
- Colors Group
- Shapes Group
- Title bar

Teach them to draw the different shapes in Paint.

Explain to the students about the Foreground and Background color and the steps to use them.

Teach the students about the Color picker tool and Text tool.

Tell the students all the steps to open an existing drawing.

Ask the students to do **Periodic Assessment-3** given on page 50.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is Ribbon?

Q. What is the use of a Callout?

Q. Which tools is used for filling colours?

Q. Which tools are used for freehand drawing?

Q. What do you mean by foreground?

Q. Which program allows you to draw various shapes like oval, polygon, etc.?

Evaluation

After explaining the chapter, let the students do exercises given on pages 47 to 49 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **In the Lab** section on page 49 in the main course book. This will enhance the abilities of the students and serve as Creativity and Critical Thinking Activity.

Suggested Activity

Ask the students to draw a colorful picture on the topic 'Rainy Season' using the various tools of their choice.

7 Reasoning and Analysis

Teaching Objectives

Students will learn about:

- Number Pyramid
- Secret Message: Decoding
- Number Grid

Number of Periods	
Theory	Practical
1	2

Teaching Plan

While teaching the chapter, tell the students about pyramid and Grid.

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

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

Make the students aware of secret message: Decoding.

Ask the students to solve the activity **Think Tank** given on page 51.

Ensure that the **Teacher's Corner** section 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 number grid?

Q. Define decoding.

Q. In what forms can the hidden message be present?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 52 and 53 in the main course book as **Exercise**.

Ask the students to complete the elements like **SDG Activity** given on page 53.

Suggested Activity

Ask the students to draw a colorful picture of a hut in Paint.

8 Blocks in ScratchJr

Teaching Objectives

Students will learn about:

- Components of ScratchJr Window
- Blocks in ScratchJr

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students about blocks of ScratchJr.

Make them understand the components of ScratchJr window. Those are:

- Stage
- Green Flag
- Character
- Save Button
- Block categories
- Change Background
- Blocks Palette
- Reset Character Button
- Plus Button
- Programming Area

Explain to the students that ScratchJr blocks are divided into different categories based on their functions. Some of them are:

- Motion Blocks
- Control Blocks
- Events Blocks
- Looks Blocks
- Sound Blocks

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

Extension

Ask the students some oral questions based on this chapter.

Q. Which is used to create animated stories and games?

Q. Which blocks are used to repeat and pause the character?

Q. Which block rotates a character clockwise?

Q. Which blocks are used to control the movement of a Character?

Q. What are the components of ScratchJr window?

Q. Name any one Events block.

Q. Name the blocks which are green in colour.

Q. Which block is used to play a pop sound?

Evaluation

After explaining the chapter, let the students do exercises given on pages 57 and 58 of the main course book as **Exercise**.

Ask the students to try **Hands-On** activity given on page 58 to inculcate Creativity and Critical Thinking skills.

Take the students to the computer lab and let them practice the activity given in the **IN THE LAB** section on page 59 in the main course book. This will enhance the abilities of the students and serve as Creativity and Critical Thinking Activity.

Suggested Activity

Ask the students to create a pet animation using ScratchJr. Choose a pet character and make it say 'Hi' and it also move around the screen.

9 Artificial Intelligence Around Us

Teaching Objectives

Students will learn about:

- Artificially Intelligent Machines
- Robots and AI
- AI Around Us

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching the chapter, tell the students the meaning of Artificially Intelligent machines with proper and simple examples.

Tell the students what AI is, how it has surrounded us and what its purpose is this in real life. Describe in simple words.

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.

Relate all these to their daily life routine.

Ask the students to solve the **Think Tank** given on page 61.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is artificial intelligene?

Q. What should an artificially intelligent machine be capable of?

Q. Define the following:

- Voice Assistant
- Face Detection
- Navigation

Q. What is a robot?

Q. How do robots help us?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 63 and 64 in the main course book as **Exercise**.

Ask the students to try **Hands-On** activity given on page 17 to inculcate Creativity and Critical Thinking skills.

Take the students to the computer lab and let them practise the activity given in the **IN THE LAB** on page 65 in the main course book. This will enhance the ability of the students and foster Critical Thinking and Information Literacy skills.

Suggested Activity

Ask the students to practise more in Quick Draw.