TOUCHPAD

Ver. 4.0

3

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.

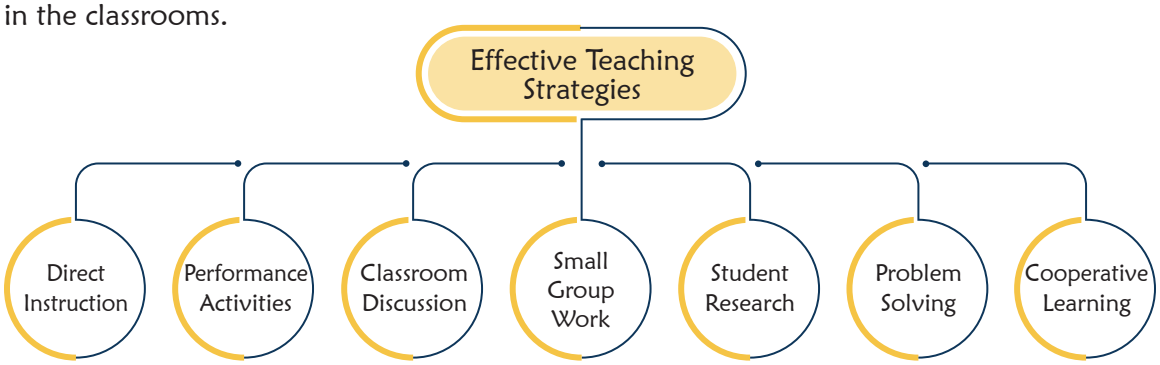
After the class

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

"Knowing yourself is the beginning of all wisdom."

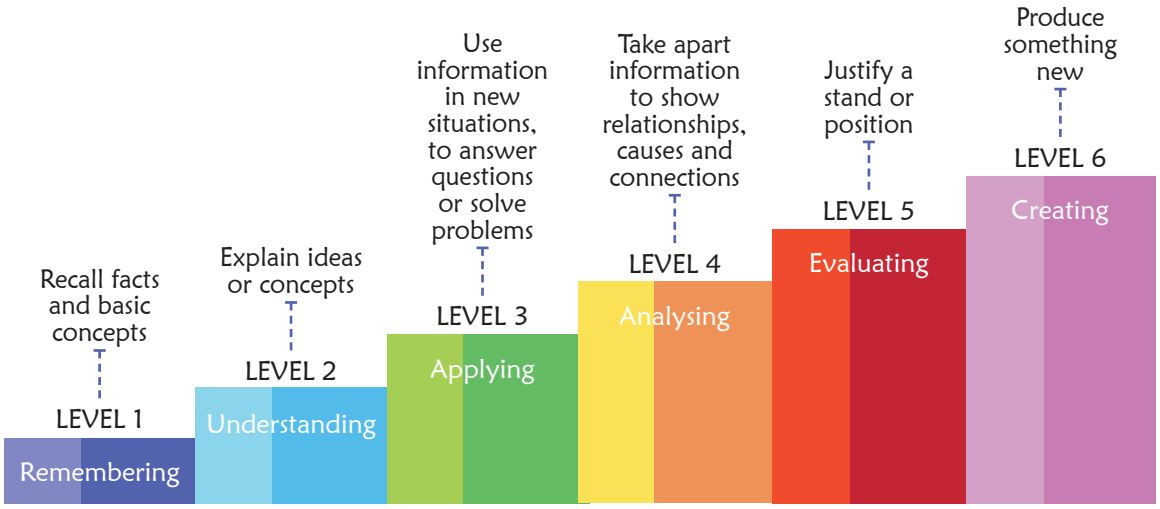
Teaching Strategies

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 3

LESSON PLAN

1 A Computer System

Teaching Objectives

Students will learn about

- Hardware
- How does a Computer Work?
- Software

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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

Explain the meaning of the terms input devices.

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

Explain the meaning of the terms processing device.

Tell them how CPU runs all the programs and manages all the operations.

Explain the meaning of the terms output devices.

Tell them how monitor, printer, headphones, projector and speakers are used to give output data from a computer.

Make the students understand the meaning of the term Storage.

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

Explain to the students about software and its types.

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

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. Expand IPO.

Q. Define input / output / processing.

Q. Name some input, processing and output devices.

Q. What is storage?

Q. Give examples of some storage devices.

Q. What is a software?

Q. What is system software?

Q. Define application software.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 11 and 12 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 12 of the main course book will enhance the ability of the students and serve as a Information Literacy activity.

Suggested Activity

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

2 Computer Memory

Teaching Objectives

Students will learn about

- Memory
- Measuring the Computer's Memory

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that like human beings, computers also have memory to store all data and instructions for performing various tasks.

Tell the students about the two types of computer memory – primary memory and secondary memory.

Share with the students that the primary memory of the computer is fixed on the motherboard of the computer.

Explain in detail about the types of Primary Memory covering:

- Random Access Memory (RAM) – the volatile memory
- Read Only Memory (ROM) – the non-volatile memory

Give a brief introduction about secondary memory or secondary storage devices covering in detail:

- Magnetic Disk (Hard Disk – Internal and External)
- Optical Disk (CD, DVD)
- Flash Drive (Pen Drive, Memory Card)

Introduce byte as the basic unit of measuring computer memory and nibble as half a byte.

Share with the students the meaning and relationship between higher units of measurement of computer memory – KB, MB, GB, TB, PB, EB, ZB and YB.

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 computer memory?

Q. What is primary memory?

Q. Name the different types of primary memory.

Q. Expand RAM / ROM.

Q. What are the different types of RAM?

Q. What is the difference between primary and secondary memory?

Q. Name the categories in which secondary storage devices are divided into.

Q. What are the different types of CDs and DVDs?

Q. Expand CD / DVD.

Q. What is a pen drive / memory card?

Q. Define a byte.

Q. Name any three higher units of measurement of computer memory.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 15 to 17 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 17 of the main course book will enhance the ability of the students and serve as a Information Literacy activity.

Suggested Activity

Ask the students to research and collect information about some secondary storage devices like floppy disks, which have now become obsolete.

3 Let's Know About Windows 10

Teaching Objectives

Students will learn about

- Windows 10
- Sorting Desktop Icons
- Changing Desktop Background
- Desktop
- Hiding Desktop Icons

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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

Give a brief introduction of Microsoft Windows.

Tell the students the about the useful features of Windows 10.

Make the students aware about the concept of desktop.

Familiarise the students with some important icons on the desktop like This PC, Recycle Bin and Network.

Tell the students that taskbar is a long horizontal bar located at the bottom of the desktop which helps to manage various currently active programs, opened in different windows.

Demonstrate to the students the steps to sort icons on the desktop.

Show to the students that how some or all of the icons on the desktop can be hidden.

Introduce the students to the taskbar and its components covering Start button, Opened program icons and Notification Area.

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

Explain to the students the use of the 'Computer' icon.

Tell the students that the mouse pointer changes its shape on the basis of our actions performed.

Demonstrate to the students the steps to change desktop background.

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 the importance of an operating system?

Q. Give examples of some popular operating systems.

Q. Which company developed Windows operating system?

Q. What are the important features of Windows 10?

Q. What is desktop?

Q. Define icons.

Q. What is taskbar?

Q. What are the steps to sort desktop icons?

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**.

In Creative Assignment, activities like **HANDS ON** and **In the Lab** given on Page 23 of the main course book will enhance the ability of the students and serve as a Creativity and Technology Literacy activity.

Suggested Activity

Ask the students to draw the various shapes of a mouse pointer and the action being performed at that time on an A3 sheet of paper.

4 Advance Features of Paint

Teaching Objectives

Students will learn about

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

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that Paint is used to:

- Draw and colour new pictures.
- View and edit the scanned pictures.
- Set your picture as wallpaper.

Ensure that the students are able to recall the components of Paint window.

Tell the students about how to draw shapes in Paint.

Explain them about Polygon shape which is used to draw a polygon or a closed figure.

Demonstrate the steps to draw a polygon to the students.

Tell the students about Callout shape which is a text box and is used to type a comment in box.

Tell them bout different types of Callout shapes; Rounded rectangle callout, Oval callout and Cloud callout.

Demonstrate the steps to draw a Callout shape to the students.

Explain the students that the colour that is in front is called Foreground and the colour that is in back or behind is called Background.

Tell them the steps involved to use Foreground and Background colour.

Make the students understand that the tool which is used to pick a colour from an existing object and reuse in other object within the same drawing area is Color Picker Tool.

Demonstrate the steps to use Color Picker Tool.

Explain the students about Text tool which is used to type text in the drawing area.

Tell them the steps involved to use Text tool.

Make the students understand that they can open their existing drawing and tell them the steps involved to open an existing drawing.

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 Tools group?

Q. What is the use of callout shape?

Q. Difference between Foreground and Background color.

Q. What is the use of Text tool?

Q. Name any 5 components of Paint window.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 32 and 33 of the main course book as **Exercise**.

In Creative Assignment, activity like **In the Lab** given on Page 34 of the main course book will enhance the ability of the students and serve as a Creativity and Critical Thinking activity.

Suggested Activity

Ask the students to create a drawing of a village scene in Paint.

5 More on Paint

Teaching Objectives

Students will learn about

- Selecting an Image
- Flipping an Image
- Copying/Cutting and Pasting
- Rotating an Image
- Zooming an Image

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that they will learn more features of paint like copy, paste, flip and rotate,

Tell the students that Select command is used to select a drawing or part of a drawing and have two types of selection which are Rectangular selection and Free form selection.

Show to the students how a drawing or part of a drawing can be selected.

Tell the students that Rectangular selection is used to select the drawing in rectangular form.

Demonstrate to the students the steps involved in using Rectangular selection.

Tell the students that Free form selection is used to select the drawing in free form.

Demonstrate to the students the steps involved in using Free form selection.

Demonstrate to the students the meaning of and steps involved in:

- Flipping an image
- Rotating an image
- Zooming an image

Make the students understand the difference between Copying-Pasting an image and Cutting-Pasting an image.

Demonstrate to the students the steps involved in both these activities (Copy-Paste and Cut-Paste).

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 can Paint be used for in computers?

Q. What do you understand by the term flipping an image?

Q. What is the meaning of zooming an image?

Q. What is the difference between Cut-Paste and Copy-Paste?

Q. Can drawings made in Paint be set as Desktop Backgrounds?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 41 to 43 of the main course book as **Exercise**.

In Creative Assignment, activities like **HANDS ON** and **In the Lab** given on Page 43 of the main course book will enhance the ability of the students and serve as a Creativity and Technology Literacy activity.

Suggested Activity

Ask the students to create a drawing of a night sky with moon and stars.

6 Stepwise Thinking

Teaching Objectives

Students will learn about

- Simple Instructions
- Loops
- Decision Making
- Understanding Programs

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Begin with description of simple instructions and make them understand how the order of instructions is important to do a task successfully.

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

Tell the students about decision making and give a brief introduction about it.

Introduce Looping to the students with simple example.

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 are instructions?

Q. Expand the sequence of instructions to make a fruit salad.

Q. What is stepwise thinking?

Q. What decision making?

Q. Expand 'if', 'then' and 'otherwise'.

Q. Define looping.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 48 and 49 in the main course book as **Exercise**.

In Creative Assignment, activities like **In the Lab** given on Page 49 of the main course book will enhance the ability of the students and serve as a Information Literacy and Creativity activity.

Suggested Activity

Ask the students to write a decision making situation.

7 Pivot Animator

Teaching Objectives

Students will learn about:

- Uses of Pivot Animator
- Components of Pivot Animator App
- Saving an Animation Project
- Creating a Figure in Pivot Animator
- Getting Started with Pivot Animator
- Creating Simple Animation
- Exporting an Animation
- Loading the Figure

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter tell the students that pivot Animator is a free and simple tool to make animations with stick figures.

Explain the uses of Pivot Animator, such as creating short stories, designing own characters, and exporting animations as GIFs or videos.

Discuss the steps involved in downloading and installing Pivot Animator from its official website.

Show the steps involved in starting Pivot Animator v5.

Make the students aware about all the components of Pivot Animator app window:

- **Title Bar** – Displays the app name and project title.
- **Menu Bar** – Provides options to manage projects.
- **Frame Controls** – Allows adding, deleting, and navigating frames.
- **Player Controls** – Lets users play, pause, and loop animations.
- **Background Button** – Adds or changes backgrounds.
- **Add Figure Button** – Allows adding new stick figures.
- **Figure Controls** – Used to move, rotate, or resize figures.

- **Add Frame Button** – Adds a new frame to the animation sequence for smooth motion.
- **Frame Panel** – Displays animation frames in a timeline.
- **Canvas** – Refers to the area where you create and animate your stick figures.
- **Figure** – Refers to the stick figures made of segments and joints in your animation.
- **Segment Handle** – Lets you reposition or resize a figure's segment.
- **Origin Handle** – Acts as the pivot point for rotating the figure.
- **Status Bar** – Shows information like the current frame number, speed, and active tool.

Show the steps involved in creating a simple animation with example.

Demonstrate the steps involved in saving an animation project with an example.

Show to the students the steps involved in exporting an animation project to turn your project into a finished file, like a GIF or video.

Explain the steps involved in creating a custom figure in Pivot Animator with an example.

Demonstrate the steps involved in loading the custom figure to use it for creating an animation.

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 Pivot Animator used for?

Q. How does adding frames help in animation?

Q. What is the difference between saving and exporting an animation?

Q. How do you create a custom figure?

Q. Name of 3 components of Pivot Animator window.

Q. Which component of Pivot Animator let you play, pause, stop and loop the animation?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 61 and 62 in the main course book as **Exercise**.

In Creative Assignment, activities like and **In the Lab** given on Page 62 of the main course book will enhance the ability of the students and serve as a Technology Literacy activity.

Suggested Activity

- Ask students to create a simple animation of a stick figure walking and save it as a GIF.
- Let them present their animations in class and discuss challenges faced during the process.

8 Introduction to Google Blockly

Teaching Objectives

Students will learn about

- Starting Blockly
- Maze Game
- Puzzle Game

Number of Periods	
Theory	Practical
2	2

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 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 Puzzle / Maze game?

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

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 71 and 72 of the main course book as **Exercise**.

In Creative Assignment, activities like **In the Lab** given on Page 72 of the main course book will enhance the ability of the students and serve as a Critical Thinking activity.

Suggested Activity

Ask the students to use Blockly to help a robot navigate through a maze and reach its home using basic programming concepts like loops and conditionals.