8

TRACKPAD

iPro Ver. 4.0

Teacher's Manual

Extended Support for Teachers

ORANGE
www.orangeeducation.in
www.thetouchpad.com

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 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.

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During the class:

Present the lesson plan.

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After the class:

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

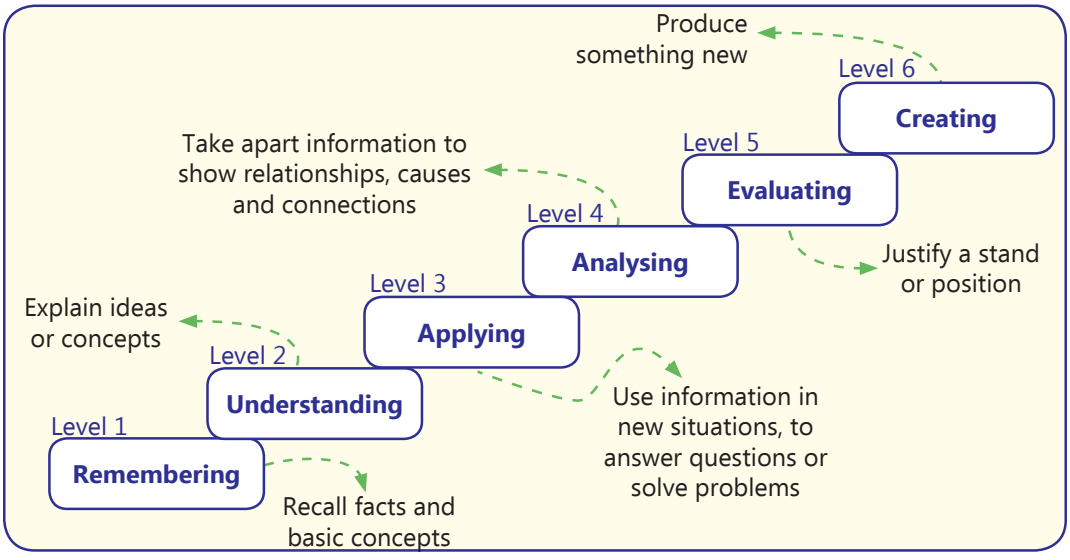
"Knowing yourself is the beginning of all wisdom."

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 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 8

Lesson Plan

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1. Operating System

Teaching Objectives

Students will learn about

- ☞ Operating system
- ☞ Functions of an Operating System
- ☞ What is a user interface?
- ☞ Why do we need an Operating System?
- ☞ Types of Operating Systems
- ☞ A comparison between CUI and GUI

Teaching Plan

Number of Periods	
Theory	Practical
3	2

While While teaching this chapter, tell the students how a computer works with a combination of hardware and software.

Share with the students different categories of software:

- System software
- Application software

Explain what is an operating system

Explain what is the need of an operating system.

Demonstrate to the students different functions of an OS.

- Arranging Files and Folders
- Assigning Tasks to CPU
- Managing Memory
- Managing Resources
- Managing Devices
- Security

Tell the students about the different types of OS

- Single-user Operating System
- Multi-processing Operating System
- Multi-tasking Operating System
- Multi-user Operating System
- Real-time Operating System

Introduce user interface and its advantages and disadvantages.

Share with the students different types of User interfaces.

Explain GUI and its advantages and disadvantages.

Compare and explain differences between CUI & GUI.

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

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Extension

Ask the students some oral questions based on this chapter.

Q. What is a System Software?

Q. What is an OS?

Q. What is the need of an OS?

Q. What are some different types of OS?

Q. Explain the use of GUI in an OS.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 12,13 and 14 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Crack the Code activity given on page 14 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Be Creative and Practical Time given on page 15 of the main course book will enhance the ability of the students and serve as a digital literacy, experiential learning activity.

Suggested Activity

Ask the students to create an algorithm to add 2 numbers and explain through a flowchart.

2. Spreadsheet—Functions and Charts

In this chapter, you will learn about some advanced features of Excel 2019.

Teaching Objectives

Students will learn about

- Different ways to enter formulas
- Cell referencing in formulas and its types
- Functions
- Charts in excel
- Understanding cell range
- Customise worksheet tab
- Common errors
- Sorting data

Teaching Plan

Number of Periods	
Theory	Practical
2	3

While teaching this chapter, tell the students that Excel has some built-in formulas called functions.

Share with the students the basic elements and rules of writing a formula in Excel.

Show to them the different methods of copying and pasting a formula.

Tell them the order of operation followed in Excel.

Introduce cell referencing as use of cell address while writing a formula.

Make them understand the different types of cell referencing and the difference between the three – Absolute, Relative and Mixed.

Tell the students about rules for using Functions and different categories of Functions in Excel.

Demonstrate the use of mathematical functions – SUM, PRODUCT, MOD, SQRT, INT, POWER and COUNT.

Demonstrate the use of text functions – CONCATENATE, LEFT, RIGHT, LEN, UPPER and LOWER.

Demonstrate the use of logical functions – MAX, MIN and AVERAGE.

Demonstrate the use of date functions – TODAY, MONTH, YEAR and DAY.

Show the different components of an Excel chart.

Familiarize the students with the different types of chart options available.

Demonstrate the steps of:

- Creating a chart.
- Modifying a chart by changing its type, layout and design.

Demonstrate and explain to the students the procedure to apply sorting in MS Excel.

Explain and demonstrate custom sort.

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 Functions in Excel?

Q. Name the different elements of a formula in Excel.

Q. What is the order of operation followed in Excel?

Q. Define cell referencing.

Q. Name some important categories of Functions.

Q. State the purpose of SUM / SQRT / MOD / COUNT / LEN / RIGHT / TODAY / MAX Function.

Q. What is the syntax of PRODUCT / INT / POWER / CONCATENATE / LEFT / UPPER / LOWER / MIN / AVERAGE function?

Q. Define charts in Excel.

Q. What is a legend?

Q. What are gridlines in a chart?

Q. When is a Line / Column / Pie / Bar / Area chart used?

Q. In Excel, can we change the type of chart used earlier?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 34, 35, 36 and 37 as Exercise. After solving the course book exercises, tell the students to solve Crack the Code activity given on page 37. Help the students to solve these questions.

In Creative Assignment, activity like Practical Time given on page 38 will enhance the ability of the students and serve as a coding & computational thinking, creative & innovativeness activity.

Suggested Activity

1. Ask the students to enter their last mark sheet in Excel and calculate total marks scored, average marks scored, maximum and minimum marks amongst all the marks and the number of subjects using various Functions used in Excel.
2. From the previous mark sheets of Grade 1 to 6, collect data about your attendance in various Grades. Plot a Line Chart in Excel from the data.

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3. Algorithms and Flowcharts

Teaching Objectives

Students will learn about

- ☞ Algorithm
- ☞ Uses of an algorithm
- ☞ Defining flowchart
- ☞ Characteristics of a good algorithm
- ☞ Writing an algorithm
- ☞ Solving problems using algorithm and flowchart

Teaching Plan

Number of Periods	
Theory	Practical
3	1

While teaching this chapter, tell the students how to solve problems using various strategies.

Share with the students what is an algorithm and characteristics of a good algorithm.

Explain what are the uses of an algorithm.

Demonstrate to the students the method of writing algorithms with examples.

Tell the students the steps involved in writing an algorithm.

Introduce flowchart and different symbols used in a flowchart.

Show to the students rules of drawing a flowchart and advantages of flowcharts.

Share with the students how to use algorithms and flowcharts for solving problems.

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 an algorithm?

Q. What are advantages of using an algorithm?

Q. What is a flowchart?

Q. What are some rules of drawing a flowchart?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 46 and 47 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Crack the Code activity given on pages 47 and 48 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Be Creative and Practical Time given on page 48 of the main course book will enhance the ability of the students and serve as a coding & computational thinking, interdisciplinary activity.

Suggested Activity

Ask the students to create an algorithm to add 2 numbers and explain through a flowchart.