4

TRACKPAD

Ver. 5.0

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 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.

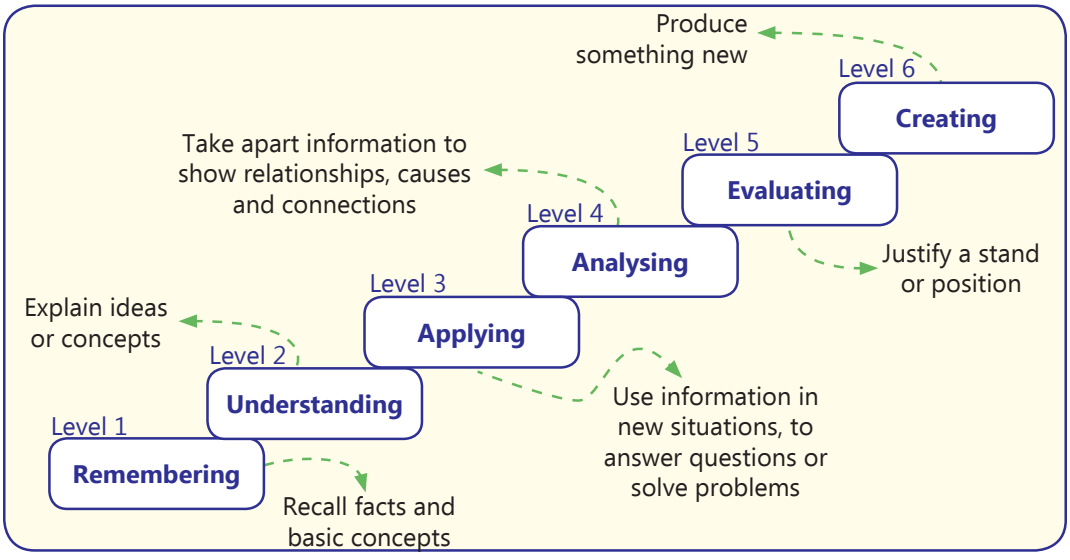
"Knowing yourself is the beginning of all wisdom."

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 4

LESSON PLAN

Trackpad Ver 5.0

1. Computer Memory

Teaching Objectives

Students will learn about

- ☞ Computer Memory
- ☞ Types of Computer Memory
- ☞ Online Storage Site (Cloud Storage)

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page number 7 to understand the recap of the topic.

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.

Begin with description of various units of memory like byte.

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

Make the students aware 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

Let the students know the meaning and difference between the two types of RAM – Dynamic RAM and Static RAM.

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, Blue-ray Disk – ROM, R and RW))
- Flash Drive (Pen Drive, Memory Card)

Brief the students about online storage, i.e. cloud storage.

Ask the students to solve the exercise **I Know** given on page number 10.

Ask the students to solve the exercise **Quiz Bee** given on page number 11.

Extension

Ask the students some oral questions based on this chapter.

Q. What is computer memory?

Q. How is memory measured in a computer?

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. Write a note on online storage.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 12 and 13 in the main course book in the form of Assess Yourself. Tell them to solve the interdisciplinary and computational skills developing exercise as Coding Zone given on page 14.

Take the students to the computer lab and let them practise the activity given in the Lab Activity and Fun Activity section on pages 13 and 14 in the main course book. This will enhance the ability of the students and serve as a creative, critical thinking, information and technology literacy activity.

Ask the students to carry out the Group Discussion session given on page 13 in the class only to enhance social interaction and communication skills.

Suggested Activity

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

2. The Computer Timeline

Teaching Objectives

Students will learn about

- ☞ Evolution of Computers
- ☞ Generations of Computers
- ☞ Features of Computers
- ☞ Limitations of Computers

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page number 15 to understand the recap of the topic.

While teaching this chapter, tell the students that the computer is an outcome of labour of a number of minds.

Tell the students about the early counting tools like knots tied on a rope, marks carved in clay, fingers, pebbles, etc.

Explain to the students about invention of Abacus – the first calculating device.

Share with the students the importance and usefulness of Abacus even today and that it is being taught in schools today also.

Give a brief account of these calculating machines:

- Napier's Bones
- Pascaline Calculator
- Difference Engine
- Analytical Engine

Tell the students about Charles Babbage, the father of computers, and his invention of Difference Engine which was later improved by him into Analytical Engine, the first working model of a mechanical computer.

Explain to the students about the concept of generations of computers and need for classification on this basis.

Share with the students the characteristic features of the different generations of computers covering:

- First Generation (1940s) – MARK-I, ENIAC, UNIVAC
- Second Generation (1950s)
- Third Generation (1960s)

- Fourth Generation (197os)
- Fifth Generation (Present)

Make the students understand the basic features of a computer that makes it a special machine covering:

- Speed
- Accuracy
- Diligence
- Storage Capacity
- Versatility

Share the limitations of computer with the students.

Ask the students to solve the exercise **I Know** given on page number 17.

Ask the students to solve the exercise **Quiz Bee** given on page number 19.

Extension

Ask the students some oral questions based on this chapter.

Q. Name some early counting tools.

Q. What is Abacus?

Q. Which is the first mechanical calculator?

Q. Which is the first mechanical computer?

Q. Who is called the Father of Computers?

Q. How many generations of computers are there?

Q. What was the technology used in First / Second / Third / Fourth / Fifth generation of computers?

Q. Give three characteristic features of First / Second / Third / Fourth / Fifth generation of computers.

Q. What are limitations of computers?

Evaluation

After explaining the chapter, let the students do the exercises given on page 20 and 21 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 23.

Take the students to the computer lab and let them practise the activity given in the Fun Activity and Lab Activity section on page 22 in the main course book. This will enhance the ability of the students and serve as a critical thinking, information and technology literacy activity.

Ask the students to try Video based question given on page 22 in the computer lab to enhance media literacy skills.

Suggested Activity

Ask the students to prepare a collage of different models of computers depicting its evolution over the generations.

3. Managing Files and Folders

Teaching Objectives

Students will learn about

- ☞ Windows 11 Operating System
- ☞ Managing Files and Folders

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page number 24 to understand the recap of the topic.

Introduce file as an item that contains a collection of related information, a folder as a collection of files and a sub folder as a folder within a folder.

Introduce to the students the Windows Explorer as a file manager that manages files and folders.

Demonstrate to the students the steps to open Windows Explorer.

Familiarize the students with the various components of Windows Explorer covering:

- Toolbar
- Navigation pane
- File List pane
- Status bar
- Address bar
- Search
- Back and Forward.

Tell the students that Windows 11 has some default folders to organize similar files.

Demonstrate to the students the steps to:

- Open a file and a folder
- Select a file and a folder (including selecting a single file, selecting multiple files, selecting all files and deselecting a file)
- Copying a file and a folder (using Copy-Paste features)
- Moving a file and a folder (using Cut-Paste features)

- Creating a new file and a folder
- Renaming a file and a folder
- Deleting a file and a folder
- Restoring a file and a folder

Ask the students to solve the exercise **I Know** given on page number 26.

Ask the students to solve the exercise **Quiz Bee** given on page number 27.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a file / folder / subfolder?

Q. Define a computer icon.

Q. What is Windows Explorer?

Q. Name the default folders of Windows 11 for organizing data.

Q. Which key is used to select multiple files?

Q. Which key is pressed to invert the selection?

Q. What is the difference between copying a file and moving a file?

Q. What is Sneak feature of Windows 11?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 30, 31 and 32 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 32.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 32 in the main course book. This will enhance the ability of the students and serve as a an interdisciplinary activity.

Ask the students to try Self Reflection session so as to highlight elements like responsibility on part of the students.

Suggested Activity

Ask the students to collect information about some more features of Windows 11 other than those discussed in the chapter.