

TOUCHPAD

Artificial Intelligence Ver. 1.1

1

TEACHER'S MANUAL

Extended Support for Teachers



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Teacher's Time Table		B R E A K						
Periods / Days								
		0	I	II	III	IV	V	VI
Days	Monday							
	Tuesday							
	Wednesday							
	Thursday							
	Friday							
	Saturday							
	Sunday							

Teacher's Time Table		B R E A K						
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	Saturday							
	Sunday							

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



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.

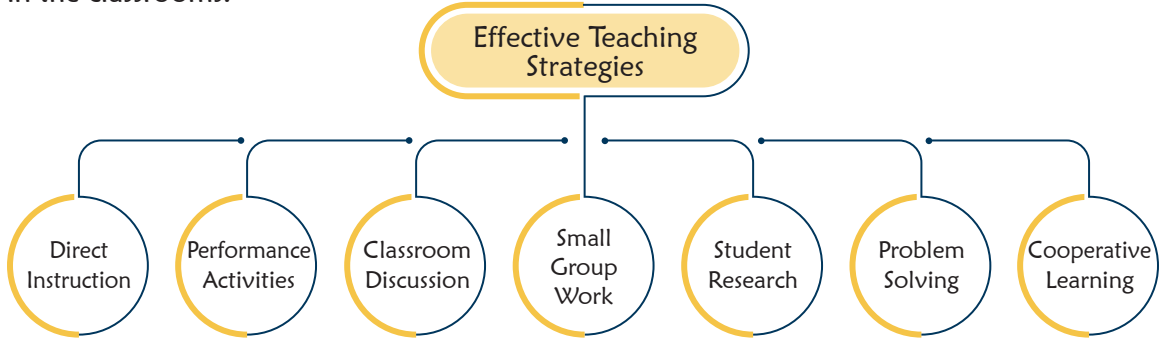
After the class

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

“Knowing yourself is the beginning of all wisdom.”

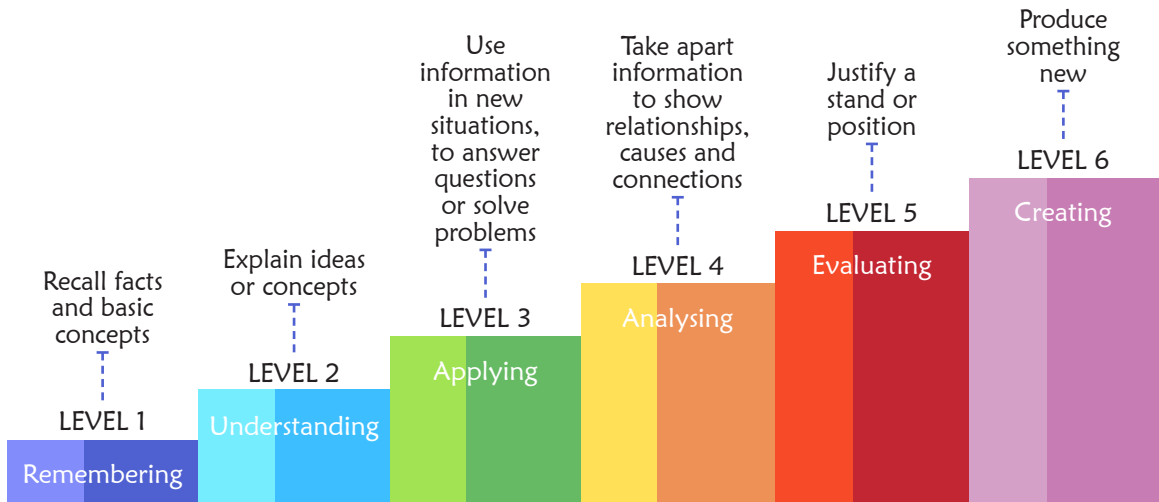
Teaching Strategies

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. ”

Natural and Artificial Things

Teaching Objectives

- ★ Students will learn about
- ★ Natural Things
- ★ Artificial Things
- ★ Machine
- ★ Computer—A Smart Machine

Number of Periods	
Theory	Practical
1	1

Teaching Plan

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

While teaching this chapter, tell the students about natural and artificial things by showing pictures and videos.

Encourage the students to name some things which they see around themselves.

Make them understand that some of these things are natural like the sun, moon, star, mountains, cat, dog, tree, boy, girl, etc.

The other things are man-made like a chair, table, TV, fan, pencil, eraser, board, building, washing machine, mobile, etc.

Explain to the students that natural things are gifted by nature and artificial things are made by man(man-made)

Explain to the students that machines are made by man.

Give examples of some machines around us like refrigerator, air conditioner, television, juicer, mobile, car, etc., and their uses. Also, tell the benefits of using a machine.

Tell them that a computer is also a machine.

Tell them the various things we can do with the computer like doing sums, drawing, listening to music, watching movies, learning, playing games, etc.

Ask the student to solve the exercise given on pages 10 and 13 as **AI Reboot**.

Ask the students to read the **Brainy Fact** given on page 14.

Extension

Ask the students some oral questions based on this chapter.

- Q. What do you mean by natural things?
- Q. Give two examples of artificial things.
- Q. What is a computer?
- Q. Give any two examples of natural things.
- Q. Why machines are useful to us?
- Q. What are artificial things?

Evaluation

After explaining the chapter, let the students do exercises given on Pages 15, 16 and 17 of the main course book as **AI Quiz** and **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **AI Lab** section on Page 17 in the main course book. This will enhance the abilities of the students and serve as a Subject Enrichment Activity.

Suggested Activity

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

2

Smart Machines

Teaching Objectives

Students will learn about

- ✦ Smart Washing Machine
- ✦ Smart Refrigerator
- ✦ Smartwatches
- ✦ Smart Vacuum Cleanser
- ✦ Smart Speakers

Teaching Plan

Before starting the chapter, ask the students to read the comic given in page number 18 to understand the topic.

While teaching this chapter, tell the students about machines are all around us and we use it everyday. Encourage the students to name some machines which they see around themselves.

Number of Periods	
Theory	Practical
1	2

Make them understand about Smart machines and Artificial Intelligence.

Explain to the students about Smart machines and how we can access it by connecting through our mobile phones:

- Smart Washing Machine
- Smart Vacuum Cleanser
- Smart Refrigerator
- Smart Speakers
- Smartwatches

Also, teach the students through Topic Animation and show the video about artificial intelligence on the link given on page 24 as **Video Session**.

Ask the students to solve the exercise given on page 22 as **AI Reboot**.

Ask the students to solve the task given on page 22 as **AI Task**.

Ask the students to read the **Brainy Fact** given on page 20.

Extension

Ask the students some oral questions based on this chapter.

- Q. What do you mean by natural things?
- Q. Give two examples of artificial things.
- Q. What is a computer?
- Q. Give any two examples of natural things.
- Q. Why machines are useful to us?
- Q. What are artificial things?

Evaluation

Encourage the students to walk through the chapter and ask them to play the game given on page 23 on their own under the name **AI Game** after learning about the rules and basics.

After explaining the chapter, let the students do the exercises given on Pages 24 to 27 of the main course book as **AI Quiz** and **Exercise**. Tell them to solve the critical thinking exercises as **AI in Life** given on page 27.

Take the students to the computer lab and let them practice the activity given in the **AI Lab** section on Page 27 in the main course book. This will enhance the abilities of the students and serve as a Subject Enrichment Activity.

Suggested Activity

Ask the students to paste pictures of different types of smart machines in their computer notebooks and write their names.

Teaching Objectives

- ✦ Students will learn about
- ✦ Natural Intelligence
- ✦ Artificial Intelligence

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to read the comic given in page number 28 to understand the topic.

While teaching this chapter, tell the students that Intelligence is the ability to think, understand and learn from previous experience to act in a given situation.

Make them understand about the following:

- Natural Intelligence
- Artificial Intelligence

Share the various examples of natural intelligence and artificial intelligence to the students.

Show the pictures of artificially intelligent devices to the students and also, explain their working and uses.

Also, teach the students through Topic Animation and show the video about artificial intelligence on the link given on page 33 as **Video Session**.

Ask the students to solve the exercise given on page 33 as **AI Reboot**.

Ask the students to solve the task given on page 32 as **AI Task**.

Ask the students to read the **Brainy Fact** given on page 32.

Extension

Ask the students some oral questions based on this chapter.

- Q. What do you mean by natural intelligence?
- Q. Give two examples of artificial intelligence.
- Q. Name an artificial dog with artificial intelligence.
- Q. Which devices used in factories are capable of lifting, moving, and packing objects, just like human beings?
- Q. Why machines are useful to us?
- Q. How AI is used in Smartphones?
- Q. Define Intelligence
- Q. Which makes machines as smart as humans?

Evaluation

Encourage the students to walk through the chapter and ask them to play the game given on page 34 on their own under the name **AI Game** after learning about the rules and basics.

After explaining the chapter, let the students do the exercises given on Pages 35 to 37 of the main course book as **AI Quiz** and **Exercise**. Tell them to solve the critical thinking exercises as **AI Deep Thinking** given on page 37.

Take the students to the computer lab and let them practice the activity given in the **AI Lab** section on Page 37 in the main course book. This will enhance the abilities of the students and serve as a Subject Enrichment Activity. Ask the students to think and answer the exercise as **AI Ready 1** given on page 38.

Suggested Activity

Ask the students to draw a picture of an Artificial intelligent devices.