



# TOUCHPAD

Artificial Intelligence Ver. 2.0 

## Teacher's Manual

*Extended Support for Teachers*



**ORANGE**

[www.orangeeducation.in](http://www.orangeeducation.in)

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# Teacher's Time Table

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Periods Days	0	I	II	III	IV	V	VI	VII	VIII
Monday									
Tuesday									
Wednesday									
Thursday									
Friday									
Saturday									

B

R

E

A

K



# 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 to identify and understand how children differ in different age groups.

Age 5 - 8 Years	
<b>Physical</b>	<ul style="list-style-type: none"><li>• First permanent tooth erupts</li><li>• Shows mature throwing and catching patterns</li><li>• Writing is now smaller and more readable</li><li>• Drawings are now more detailed, organised and have a sense of depth</li></ul>
<b>Cognitive</b>	<ul style="list-style-type: none"><li>• Attention continues to improve, becomes more selective and adaptable</li><li>• Recall, scripted memory, and auto-biographical memory improves</li><li>• Counts on and counts down, engaging in simple addition and subtraction</li><li>• Thoughts are now more logical</li></ul>
<b>Language</b>	<ul style="list-style-type: none"><li>• Vocabulary reaches about 10,000 words</li><li>• Vocabulary increases rapidly throughout middle childhood</li></ul>
<b>Emotional/Social</b>	<ul style="list-style-type: none"><li>• Ability to predict and interpret emotional reactions of others enhances</li><li>• Relies more on language to express empathy</li><li>• Self-conscious emotions of pride and guilt are governed by personal responsibility</li><li>• Attends to facial and situational cues in interpreting another's feelings</li><li>• Peer interaction is now more prosocial, and physical aggression declines</li></ul>

"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years	
<b>Physical</b>	<ul style="list-style-type: none"> <li>• Motor skills develop resulting enhanced reflexes</li> </ul>
<b>Cognitive</b>	<ul style="list-style-type: none"> <li>• Applies several memory strategies at once</li> <li>• Cognitive self-regulation is now improved</li> </ul>
<b>Language</b>	<ul style="list-style-type: none"> <li>• Ability to use complex grammatical constructions enhances</li> <li>• Conversational strategies are now more refined</li> </ul>
<b>Emotional/Social</b>	<ul style="list-style-type: none"> <li>• Self-esteem tends to rise</li> <li>• Peer groups emerge</li> </ul>

Age 11 - 20 Years	
<b>Physical</b>	<ul style="list-style-type: none"> <li>• If a girl, reaches peak of growth spurt</li> <li>• If a girl, motor performance gradually increases and then levels off</li> <li>• If a boy, reaches peak and then completes growth spurt</li> <li>• If a boy, motor performance increases dramatically</li> </ul>
<b>Cognitive</b>	<ul style="list-style-type: none"> <li>• Is now more self-conscious and self-focused</li> <li>• Becomes a better everyday planner and decision maker</li> </ul>
<b>Emotional/Social</b>	<ul style="list-style-type: none"> <li>• May show increased gender stereotyping of attitudes and behaviour</li> <li>• May have a conventional moral orientation</li> </ul>

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 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  
X

# Lesson Plan

Part-A: Employability Skills

Artificial Intelligence

## 1. Communication Skills-II

### Teaching Objectives

Students will learn about

- ☞ Communication
- ☞ Communication Cycle
- ☞ Impact of Body Language
- ☞ Effective Communication
- ☞ 7Cs of Effective Communication
- ☞ Measures to Overcome Barriers in Effective Communication
- ☞ Basic Writing Skills
- ☞ Parts of Speech
- ☞ Learning Objectives of Effective Communication
- ☞ Different Methods of Communication
- ☞ Feedback
- ☞ Principles of Effective Communication
- ☞ Barriers in Effective Communication
- ☞ What is a Sentence?
- ☞ Use of Articles

Number of Hours

Theory

10

### Teaching Plan

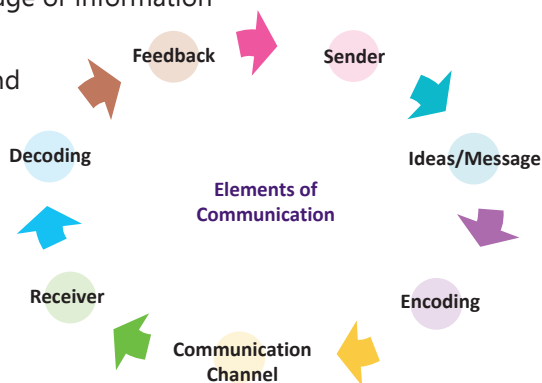
While teaching this chapter, tell the students that the word 'Communication' comes from the Latin word 'Communicare', means 'to share'.

Share the learning objectives of effective communication with the students:

- Development of interpersonal skills
- Sending, receiving and understanding the message or information
- To express effectively with maximum efficiency.

Explain the communication cycle to the students and the phases it involves:

- Sender
- Message
- Encoding
- Communication Channel
- Receiver
- Decoding
- Response/Feedback



Show the students the Methods and Types of Communication along with its advantages and disadvantages:

- Verbal Communication
- Non-Verbal Communication
- Visual Communication

Teach the students about the impact of Body Language and its Do's and Dont's.

Tell the students about the characteristics and importance of feedback and also teach types of feedback.

Teach them how to make an effective communication, its principles and 7Cs.

Define the types of barriers and measures to overcome barriers to the students in easy language for better understanding where:

Explain the following to the students with their proper purpose in detail:

- Sentence and its rules
- Phrase
- Parts of Sentence
- Parts of Speech
- Types of Sentences
- Articles and its uses

Ask the student to solve the exercise given on page 34 as **Reboot**.

Ask the students to solve the task given on pages 31, 36 and 37 as **AI Task**.

Ask the students to read the **Brainy Fact** given on pages 24 and 33.

### Extension

Ask the students some oral questions based on this chapter.

- Q. What is Communication?
- Q. What are the method of communication?
- Q. Explain communication cycle.
- Q. What is the importance of feedback?
- Q. Explain the barriers in effective communication.
- Q. Explain the 7Cs of communication.
- Q. Define:
  - a. Sentence and its Kind
  - b. Phrase
  - c. Parts of Sentence
  - d. Parts of Speech
  - e. Articles
  - f. Definite Articles

### Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 41 to 49 in the main course book as **Exercise(Solved and Unsolved Questions) and Previous Years' Questions**.

Take the students to the computer lab and let them practice the activity given in **Lab Activity** section on page 50 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment Activity.

Ask the students to practice the activity in class given in **Class Activity** section given on Page 51 in the main course book. This will help the students to Communicate in a polite way and they will improve their writing skills and verbal skills.

### Suggested Activity

Ask the students to go nearby market or shopping mall to observe how shopkeepers and salespersons are communicating.







# Lesson Plan

Part B-Subject Specific Skills

Artificial Intelligence

## 1. Introduction to AI

### Teaching Objectives

Students will learn about

- What is Intelligence?
- Decision Making
- How do Machines become Intelligent?
- What is not AI?
- Domains of AI
- Types of Intelligence
- What is Artificial Intelligence?
- Applications of AI Around Us
- AI and Related Terminologies
- AI Ethics

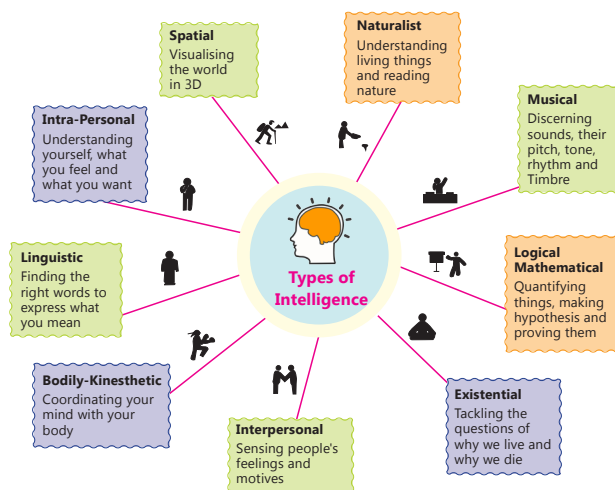
### Teaching Plan

While teaching this chapter tell the students that Intelligence is how good you are in languages or science or music or art. You cannot be naturally skilled at the same things that include your school subjects, music, sports etc.

Define the types of intelligence:

- Intrapersonal Intelligence
- Spatial Intelligence
- Naturalist Intelligence
- Musical Intelligence
- Logical-Mathematical Intelligence
- Existential Intelligence
- Interpersonal Intelligence
- Bodily-kinesthetic Intelligence
- Linguistic Intelligence

Number of Periods	
Theory	Practical
8	10



Tell the students that decision making is the process of comparing our different alternatives and coming to a conclusion on what exactly you want to do. It is a process of selection which is more satisfactory than other options.

Explain the students that Artificial Intelligence is the science and engineering of making intelligent machines. It is a technique of getting machines to work and behave like humans.

Tell the students that machines become intelligent with the algorithms that are fed into them by developers. They are trained with information that makes them intelligent to achieve the desired output.

Share the applications of AI around us which are:

- Google Search
- Digital Assistants
- Google Maps
- Preferred Recommendations
- Ridesharing Apps
- AI based Games
- Healthcare
- Chatbots

Tell the students about what is not AI and give them proper examples in detail.

Tell the students more about AI and related terminologies.

Explain the domains of AI which are:

- Data Science
- Computer Vision
- Natural Language Processing

Define the AI Ethics to the students which are:

- Data Privacy
- Unemployment
- AI Bias
- AI Access
- AI for Kids

Ask the student to solve the exercise given on page 144 as **AI Reboot**.

Ask the student to solve the exercise given on pages 129, 143, 145, 146 and 147 as **AI Task**.

Ask the students to read the **Brainy Fact** given on pages 139, 142 and 145.

Make sure to ask the students to scan and watch the video given on pages 143 and 147. Encourage the students to use the internet and search about chatbots.

### Extension

Ask the students some oral questions based on this chapter.

Q. What is intelligence?

Q. Define the following:

- a. Intrapersonal Intelligence
- b. Spatial Intelligence
- c. Naturalist Intelligence
- d. Musical Intelligence
- e. Logical-Mathematical Intelligence
- f. Existential Intelligence
- g. Interpersonal Intelligence
- h. Bodily-kinesthetic Intelligence
- i. Linguistic Intelligence



- Q. What is decision making?
- Q. What is Artificial Intelligence?
- Q. How do machines become intelligent?
- Q. Define the following application of AI:
- |                              |                       |                     |
|------------------------------|-----------------------|---------------------|
| a. Google Search             | b. Digital Assistants | c. Google Maps      |
| d. Preferred Recommendations |                       | e. Ridesharing Apps |
| f. AI based Games            | g. Healthcare         | h. Chatbots         |
- Q. Define the following:
- |                 |                    |        |
|-----------------|--------------------|--------|
| a. Data Science | b. Computer Vision | c. NLP |
|-----------------|--------------------|--------|
- Q. Define the following:
- |                 |                 |            |
|-----------------|-----------------|------------|
| a. Data Privacy | b. Unemployment | c. AI Bias |
| d. AI Access    | e. AI for Kids  |            |

### Evaluation

Encourage the students to walk-through the chapter thoroughly.

After explaining the chapter, let the students do the exercises given on pages 148 to 157 in the main course book as **Exercise (Solved and Unsolved Questions) and Previous Years' Questions**. Tell them to solve the critical and computational skill developing exercises as **AI in Life** and **AI Deep Thinking** given on page 157 and 158. Ask the students to think and answer the exercise as **AI Ready 1** given on page 147.

Take the students to the computer lab and let them practice the activity given in **AI Lab** section on page 158 in the main course book. This will enhance the ability 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 159.

### Suggested Activity

Ask the students to give a presentation on the topics below:

- |                 |                      |
|-----------------|----------------------|
| ● Domains of AI | ● Applications of AI |
| ● AI Ethics     | ● AI and its types   |

