1

CODEGPT

Ver. 4.0

Teacher's Manual

Extended Support for Teachers

ORANGE
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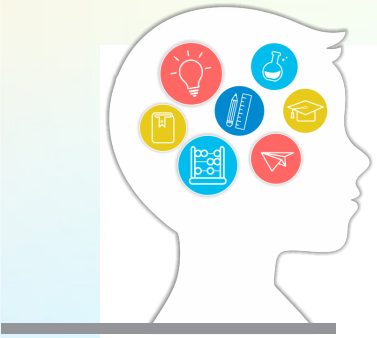
Teacher's Time Table

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

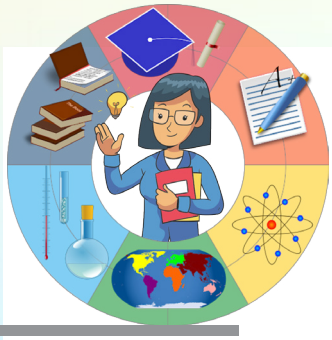
"If you cannot do great things, do small things in a great way."

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.

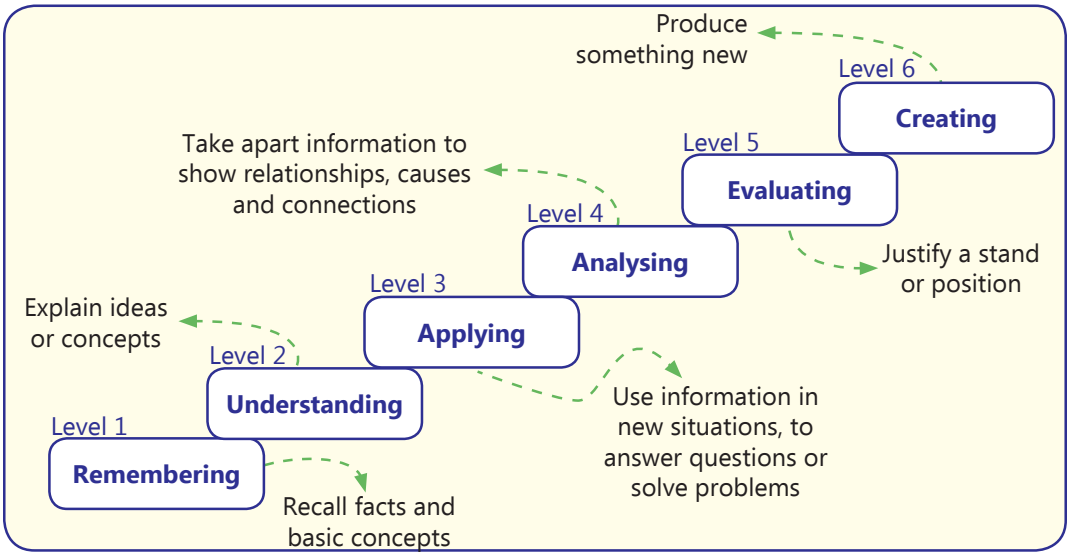
"Knowing yourself is the beginning of all wisdom."

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 1

Lesson Plan

CodeGPT Ver. 4.0

1. Computer—A Machine

Teaching Objectives

Students will learn about

- ☞ Natural and Human-Made Things
- ☞ Machine
- ☞ Computer—A Smart Machine

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 10 of the main course book.

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

Make them understand some of these things are natural like sun, moon, star, mountains, cat, dog, tree, boy, girl, etc. The other things are man-made like chair, table, TV, fan, pencil, eraser, board, building, washing machine, mobile, etc.

Explain to the students that machines are made by man.

Give examples of some machines around us like refrigerator, air conditioner, television, mobile, car, etc. and their use.

Share with them that computer is also a machine.

Encourage them to tell why computer is different from other machines (other machines can only do the work for which they are made but computer can do many kinds of work).

While teaching this chapter, tell the students that computer is a magical machine and makes our work faster and easier.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 11 and 13.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Name some natural things.

Q. Name some Human-Made things.

Q. Who makes machines?

Q. Are machines natural?

Q. What is the use of air conditioner / refrigerator / washing machine / vacuum cleaner/sharpener/ sewing machine?

Q. Is computer a machine?

Q. Why do we use computers?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 13 and 14 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **SDG Activity** given on page 15 in the main course book.

Ask the students to complete the elements like **Art Integration Learning** and **Experiential Learning** given on pages 12 and 13 at home and show it to him/her the next day.

Suggested Activity

Ask the students to discuss with their parents and elders and learn more about natural and human-made things, machines and computer. Encourage the students to share more about the smart machine with the class.

2. Uses of a Computer

Teaching Objectives

Students will learn about

- ☞ Computer—A Useful Machine
- ☞ Places Where Computers Are Used

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 17 of the main course book.

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

Tell the students about various functions of a computer, covering:

- solve sums
- type letters, poems and stories
- listen to rhymes and songs

- play games
- connect to Internet and learn about new things
- watch cartoons and movies
- paint beautiful drawings
- send and receive messages and make calls

While teaching this chapter, tell the students that computers are used in different places for different kinds of work.

Tell the students why computer is used:

- at home to watch movies, play games, make school projects, online shopping, etc.
- in schools to store student records, library books record
- in offices to maintain records
- in banks to keep record of money
- in hospitals to make medical reports, controlling machines while doing surgeries
- in shops to make bills, storing details of items

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 19 and 22.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Why is computer called the most useful machine?

Q. How are computers useful to us?

Q. Write the use of computer in the following places:

a. At Home	b. In School	c. In Bank
d. In Hospitals	e. In Offices	f. In Shops

Evaluation

After explaining the chapter, let the students do the exercises given on pages 22 and 23 in the main course book. Tell the students to try sections like **Scratch Your Brain** and **A Better Me** given on page 24 in the main course book.

Ask the students to complete the elements like **Interdisciplinary Learning** and **Experiential Learning** given on pages 19 and 21 respectively at home and show it to him/her the next day.

Suggested Activity

Ask the students to try different uses of a computer in their computer and discuss the same in the class the next day.

3. Parts of a Computer

Teaching Objectives

Students will learn about

- ☞ Main Parts of a Computer
- ☞ Other Parts of a Computer
- ☞ Input and Output Devices

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 27 of the main course book.

Tell the students that a computer has four main parts:

- **Monitor –** It looks like a television, used to see pictures, games, cartoons, alphabet, numbers and words.
- **Keyboard –** It has small buttons called keys, used for typing numbers and letters.
- **Mouse –** It is a device with long wire, two buttons and scroll wheel, used to draw pictures.
- **CPU –** It stands for Central Processing Unit, fixed inside CPU box, called brain of the computer, most important part of the computer.

Share with the students that a computer also has some other parts like:

- **Printer –** It is used to print text and images on paper.
- **Speakers –** They are attached to computer, used to hear sounds and music stored in computer.
- **Pen Drive –** It saves our work in it. We can carry a pen drive in our pocket or bag.

Understand the role of input and output devices in a computer system:

- **Input Devices –** It help us give information or commands to a computer.
- **Output Devices –** It show us information or results from a computer.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 29 and 30.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Name the four main parts of a computer.

Q. What is the use of Monitor/Mouse/keyboard/CPU?

Q. What does CPU stand for?

Q. What is the other name of a monitor?

Q. Expand VDU.

Q. Where is CPU fixed?

Q. Name some other parts of a computer.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 31 and 32 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **A Better Me** given on pages 32 and 33 respectively in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 33 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** and **Art Integration Learning** given on pages 29 and 30 respectively at home and show it to him/her the next day.

Suggested Activity

Ask the students to paste pictures of different parts of a computer in their computer notebook and write their names.

4. The Keyboard and The Mouse

Teaching Objectives

Students will learn about

- ☞ Keyboard
- ☞ Mouse

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** on page 35 of the main course book.

While teaching this chapter, tell the students that keyboard is used to write on computer screen.

Show to the students that a keyboard has small buttons on it called keys.

Make the students count that a computer keyboard has 101 to 104 keys.

Tell the students that the keys on a keyboard are divided into three categories:

- **Alphabet keys** – 26 in number (A to Z)
- **Number keys** – 10 in number (0 to 9)
- **Special keys** – Enter, Spacebar, Backspace, etc.

Show to the students the position of various categories of keys on the keyboard.

Make the students understand that the alphabet keys (A to Z) on the keyboard are also used to write in small letters (a to z).

Share with the students that the number keys are used to type numbers and there are two sets of number keys on a keyboard.

Show to the students that there are some special keys also on the computer like:

- **Spacebar key** – longest key at the bottom, used to give blank space between letters and words.
- **Enter key** – also called Return key, two in number, used to move to the next line.
- **Backspace key** – used to erase what we have typed.
- **Arrow** – Show to the students the four arrow keys (up, down, left and right) on the keyboard, used to move the cursor.

Open a MS Word file and show to the students the small blinking line called cursor.

Make the students understand that the cursor shows the place where the typed letters will appear.

While teaching this chapter, tell the students that a mouse helps us to tell the computer what to do.

Share with the students some uses of a computer mouse.

Make the students understand that there are two types of computer mouse:

- **Two-buttoned mouse** – has two buttons – left button and right button.
- **Scroll mouse** – has two buttons (left and right) and a scroll wheel.

Show to the students that the small arrow moving on the screen is called pointer.

Show to the students the correct way of holding the mouse with reference to the position of fingers and palm (shown in the main course book).

Show to the students that a computer mouse can be used for:

- **Clicking** – by pressing mouse buttons
- **Single-clicking or Clicking** – pressing and releasing left button quickly, used to select an icon.
- **Double-clicking** – pressing and releasing the left button twice quickly, used to open a program.
- **Scrolling** – placing the index finger on the scroll wheel and moving it up or down.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 38 and 41.

Ensure that the scope of **For The Teacher** 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 the small buttons on a keyboard called?

Q. How many keys are there on a keyboard?

Q. Name the categories in which the keys on a keyboard are divided into.

Q. What are alphabet / number keys used for?

Q. How many sets of number keys are there on the keyboard?

Q. How many alphabet keys are there on the keyboard?

Q. What is the use of Enter / Spacebar / Backspace key?

Q. Name some special keys.

Q. What is the use of arrow keys?

Q. How many arrow keys are there?

Q. What is a cursor?

Q. What is a mouse used for?

Q. Name the pointing device.

Q. Name the two types of mouse.

Q. Which finger must be placed on left button / right button?

Q. Which finger must be used to scroll the wheel?

Q. Which fingers must be used to hold the sides of the mouse?

Q. Define pointing / clicking / scrolling.

Q. What is the meaning of single-click / double-click?

Q. What is single-click / double-click used for?

Evaluation

After explaining the chapter, let the students do the exercises given on page 42 in the main course book. Tell the students to try sections such as **Scratch Your Brain**, **A Better Me** and **SDG Activity** given on pages 42 to 44 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 44 in the main course book. This will enhance the ability of the students and foster Information Literacy and Technology Literacy skills.

Ask the students to complete the elements like **Experiential Learning** and **Interdisciplinary Learning** given on pages 38 and 41 respectively in the computer lab and **Art Integration Learning** given on page 40 at home and show it to him/her the next day.

Suggested Activity

Ask the students:

1. To paste a picture of computer keyboard in the computer notebook and label Number keys, Alphabet keys, Enter keys, Spacebar key, Backspace key and Arrow keys on it.
2. To draw a picture of a mouse representing single-click, double click and scrolling.

5. Tux Paint

Teaching Objectives

Students will learn about

- ☞ Starting Tux Paint
- ☞ Parts of Tux Paint Window
- ☞ Tools of Tux Paint

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 50 of the main course book. While teaching this chapter, tell the students that Tux Paint is a freehand drawing program designed for young children.

Demonstrate to the students the steps involved in starting Tux Paint.

Show to the students the Welcome Screen of Tux Paint with penguin as the mascot.

Familiarize the students with the window of Tux Paint showing the position and explain the use of Toolbar (contains drawing tools), Colors Palette (contains color choices), Selector (to select desired shapes) and Drawing Canvas (drawing and colouring space).

Tell the students about basic tools of Tux Paint covering:

- **New tool:** It is used to start a new drawing.
- **Fill tool:** It is used to fill a closed area.
- **Text tool:** It is used to add text and titles in the drawings.
- **Paint Tool:** It is used to draw freehand with different brush shapes.
- **Magic Tool:** Magic tool is a collection of tools to add a lot of special effects to your drawings.
- **Stamp tool:** It is a collection of stamps or stickers that can be used while drawing or painting.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 54 and 55.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Tux Paint?

Q. Name some parts of Tux Paint window.

Q. What is the use of Toolbar / Drawing canvas / Selector / Colors Palette?

Q. Name some tools of Tux Paint.

Q. What is the use of New / Fill / Text / Paint / Magic / Stamp Tool?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 56 and 57 in the main course book. Tell the students to try sections under like **Scratch Your Brain** given on page 57 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 58 in the main course book. This will enhance the ability of the students and foster Creativity and Technology Literacy skills.

Ask the students to complete the elements like **Art Integration Learning** and **Interdisciplinary Learning** given on pages 54 and 55 respectively in the computer lab and show it to him/her the next day.

Suggested Activity

Ask the students to redraw the shapes drawn in Paint earlier in Tux Paint also.

6. Reasoning and Critical Thinking

Teaching Objectives

Students will learn about

- ☞ Working with Shapes
- ☞ Recognising Patterns
- ☞ Word Search
- ☞ Directions

Number of Periods	
Theory	Practical
1	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 60 of the main course book.

Introduce Shapes to the students in details which are:

- Square
- Rectangle
- Triangle
- Circle

Tell the students about what pattern is and to identify one. Also, tell them how to solve by giving some examples which will improve their understanding of the topic.

Show the students what is a word search and how to solve it with the help of critical thinking.

Explain to the students what directions are and how they help us reach a definite location.

Show examples for all the topics for better clarity of the lesson at the end.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 62 and 63.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a shape?

Q. How many shapes are there?

Q. What is a pattern?

Q. What is a word search?

Q. What are directions?

Q. How do directions help us?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 63 and 64 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **SDG Activity** given on page 64 in the main course book.

Ask the students to complete the elements like Interdisciplinary Learning given on page 61 at home and show it to him/her the next day.

Suggested Activity

Ask the students to practise any lesson two times and compare the result.

7. Introduction to ScratchJr

Teaching Objectives

- ☞ Starting ScratchJr
- ☞ Components of a ScratchJr Window
- ☞ Adding a New Character
- ☞ Changing the Background
- ☞ Creating a ScratchJr Project
- ☞ Saving and Executing a Project

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 67 of the main course book. While teaching this chapter, tell the students that ScratchJr is a computer program or app used to create animated stories and games.

Familiarize the students with components of ScratchJr window showing character, stage, green flag, blocks palette, block categories, programming area, etc.

Demonstrate the steps to start ScratchJr to the students.

Tell the students about adding a new character, changing the background andcreating a ScratchJr project.

Define the following to the students:

- add a new character
- change the background
- create a ScratchJr project

Demonstrate the steps to save a project to the students.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 70 and 72.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is ScratchJr?

Q. Why are blocks joined in ScratchJr?

Q. What is a character in ScratchJr window?

Q. What is the use of green flag in ScratchJr window?

Q. Name the menu of programming blocks.

Q. What is the purpose of changing the background in ScratchJr?

Q. How does ScratchJr save a file?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 72 and 73 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **SDG Activity** given on pages 73 and 74 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 74 in the main course book. This will enhance the ability of the students and foster Creativity and Technology Literacy skills.

Ask the students to complete the elements like **Interdisciplinary Learning** given on page 70 in the computer lab.

Suggested Activity

Ask the students to Draw a picnic scene of their choice using ScratchJr at home.

8. Introduction to Artificial Intelligence

Teaching Objectives

Students will learn about

- ☞ Natural and Artificial Things
- ☞ Natural Intelligence
- ☞ Artificial Intelligence (AI)

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **Test Your Knowledge** given on page 76 of the main course book.

Introduce the students with the concept of natural and artificial things. Also, tell them the difference between these two.

Explain the meaning of Natural Intelligence to the students with proper and simple examples.

Tell the students what Artificial Intelligence is and explain the purpose of Artificial Intelligence in real life in simple words.

Define the following to the students:

- Artificially Intelligent Devices
- AI Toy
- AI Machines in Factories

Relate all these to their daily life routine.

Ask the students to solve the exercises **Topic Flashback** and **Quick Quiz** given on pages 77 and 78.

Ensure that the scope of **For The Teacher** section given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is natural thing?

Q. What is artificial thing?

Q. What is natural intelligence?

Q. Define experience.

Q. What is artificial intelligence?

Q. Define artificially intelligent devices.

Q. What is an AI toy?

Evaluation

After explaining the chapter, let the students do the exercises given on page 79 in the main course book. Tell the students to try sections such as **Scratch Your Brain** and **A Better Me** given on page 80 in the main course book.

Take the students to the computer lab and let them practise the activity given in the **Explore in the Lab** section on page 80 in the main course book. This will enhance the ability of the students and foster Creativity and Collaboration skills.

Ask the students to complete the elements like **Art Integration Learning** given on page 78 at home and show it to him/her the next day.

Suggested Activity

Ask the students to learn more about latest AI toys.