# TRACKGPT

iPro Ver. 5.0

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# Teacher's Manual
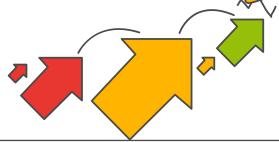
Extended Support for Teachers

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.

**Effective Teaching Strategies**

- Direct Instruction
- Performance Activities
- Classroom Discussion
- Small Group Work
- Student Research
- Problem Solving
- Cooperative Learning

# 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.

Recall facts and basic concepts
LEVEL 1
Remembering

Explain ideas or concepts
LEVEL 2
Understanding

Use information in new situations, to answer questions or solve problems
LEVEL 3
Applying

Take apart information to show relationships, causes and connections
LEVEL 4
Analysing

Justify a stand or position
LEVEL 5
Evaluating

Produce something new
LEVEL 6
Creating

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. "

# LESSON PLAN

## 1 Evolution of Computers

### Teaching Objectives

Students will learn about

- ✦ History of Computers
- ✦ Characteristics of a Computer
- ✦ Computer Generations
- ✦ Limitations of a Computer

### Teaching Plan

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 2 |

While teaching this chapter, tell the students that computers are a familiar term for you. But have you ever wondered, Who invented the computer?

Explain to the student History of the computers.

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 is being taught in schools also.

Give a brief account of these calculating machines:

- Pascaline Adding Machine
- Leibniz Step Reckoner

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.

Inform the students about Lady Ada Lovelace, accredited as the first computer programmer as the programmer to the Analytical Engine of Charles Babbage.

Share with the students about Herman Hollerith who built Tabulating Machine and later his company became a part of IBM.

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 (1970s)
- Fifth Generation (Present)

Explain to the student Characteristics of a Computer like that:

- **Speed:** A computer processes millions of instructions per second, completing tasks in seconds that once took hours.
- **Accuracy:** It ensures precise and error-free results for every calculation.
- **Diligence:** Computers work tirelessly without breaks or fatigue.
- **Storage Capacity:** They can store vast amounts of data using devices like hard disks, CDs, DVDs, and flash drives.
- **Versatility:** Computers perform diverse tasks, from document typing to media playback.
- **Compactness:** Modern computers are increasingly smaller due to advancements in technology.
- **Reliability:** A computer always delivers correct output if the input is accurate.
- **Power of Remembering:** Stored data can be retrieved whenever needed.

Tell the student some Limitation of a computer:

- **Lack of Decision-Making Ability:** Computers cannot make decisions independently and rely entirely on human instructions.
- **Lack of Intelligence:** They lack human-like intelligence and function strictly as programmed.
- **Lack of Feelings and Emotions:** Computers cannot experience or express emotions.
- **No Creativity:** They are unable to generate new ideas or be creative without human input.

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

## Extension

Ask the students some oral questions based on this chapter.

Q.  Name some early counting tools.

Q.  What is Abacus?

Q.  Who invented adding machine?

Q.  Which is the first mechanical calculator?

Q.  Which is the first mechanical computer?

Q.  Who is called the father of computers?

Q. Why is Lady Ada Lovelace famous?

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 the Limitation of the computer?

Q. Name the five Characteristics of a computer.

## Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 14 to 17 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 17 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Tangible Task and Digital Drills given on page 18 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Art Integration activity.

## Suggested Activity

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

# 2 Computer Software

## Teaching Objectives

Students will learn about

✦ Software

✦ System Software

✦ Application Software

✦ Difference between System Software and Application Software

✦ Operational Support System

| Number of Periods | |
|---|---|
| Theory | Practical |
| 3 | 1 |

## Teaching Plan

While teaching this chapter, tell the students that a computer system consists of two components – **hardware and software**.

Make the students understand that the Software, a set of instructions controlling the computer, is classified into system software and application software.

Share some examples of software with the students.

Introduce the students to the two broad categories of software as System software and Application software.

Tell the students the importance of system software for the functioning of the computer system and is classified into three categories: Operating System, Language Translator and Utility Software.

Tell the students about some commonly used system software / operating system and function of an Operating system.

Make the student understand that the Language Processor add also explain the Utility software.

Explain the importance of application software to the students.

Share with students some examples of General Purpose application software (covering Word Processors, Spreadsheet, Presentation, Graphics, DBMS, DPT, Multimedia) and the purposes for which these software are mainly used.

Tell the student Customised Software are developed to meet the specific needs of an organisation or individual.

Introduce the student difference between system and application software.

Make the student understand the Operational Support system.

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

## Extension

Ask the students some oral questions based on this chapter.

Q.   What do you understand by software?

Q.   Name the different types of software.

Q.   What is system software?

Q.   Give examples of some commonly used operating systems.

Q.   What is application software?

Q.   Name some application software and their use.

Q.   What is the main difference between System software and Application software?

Q.   What is the Language processor?

## Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 26 to 29 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 29 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 29 of the main course book will enhance the ability of the students and serve as a Experiential Learning activity.

## Suggested Activity

Ask the students to collect information about some more application software and the purpose for which they are used.

## 3    Advanced Features of Word 2021

### Teaching Objectives

Students will learn about

✦ Text Formating Tools
✦ Text Editing Tools
✦ Page Formating Tools

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 2 |

### Teaching Plan

While teaching this chapter, tell the students that formatting the text means changing the appearance and arrangement of the text.

Explain the some advance formating commands in word 2021 like that(Format printer,Superscript and Subscript, Shadow effects, Border, Artistic Border and Shading.

Tell the student Text Editing tools and few commonly used commands:

- **Selecting Text:** Before changing text, select it using key combinations or by dragging the mouse over the text.

- **Removing Text:** Delete text by selecting it and pressing either the Backspace or Delete key.

- **Cutting Text:** Removes text from its original location to paste it elsewhere.

- **Shortcut:** Ctrl + X to cut and Ctrl + V to paste.

- **Copying Text:** Keeps text in its original location while also pasting a duplicate.

- **Shortcut:** Ctrl + C to copy and Ctrl + V to paste.

- **Undo and Redo:** Undo (Ctrl + Z) reverses the last action or series of actions. Redo (Ctrl + Y) reapplies an undone action.

- **Spelling and Grammar Check:** Automatically identifies and highlights errors:

   ♦ Red wavy line for spelling mistakes.

   ♦ Green wavy line for grammatical errors.

Explain the Find and Replace the word on the sentence.

Tell the student Page Formating Tools and explain the different page formating features like that(Header and Footer, Column, Column break, Page break, Line break, Tabs, Indentation, Page margin, Page orientation and Page size.

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

## Extension

Ask the students some oral questions based on this chapter.

Q.  Define formatting a text.

Q.  What do you mean by highlighting text?

Q.  What is the difference between bold and italic format of the text?

Q.  What are page formatting tools? List any five examples of page formatting tools.

Q.  Define the Page margin /  Page size / Line break /  Page break.

Q.  What are Shadow effects?

Q.  Define text alignment.

Q.  Why is shading added to text?

Q.  What does Change Case option do?

## Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 43 to 46 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 46 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Tangible Task and Digital Drills given on pages 46 and 47 of the main course book will enhance the ability of the students and serve as a Art Integration and Digital Literacy activity.

## Suggested Activity

Ask the students to collect write a paragraph on My Favourite Sport in Word 2021 applying various formatting features to make the paragraph attractive.

# 4    Graphics in Word 2021

## Teaching Objectives

Students will learn about

✦   Shapes

✦   Inserting WordArt

✦   Inserting Pictures

✦   Inserting Symbols

| Number of Periods | |
|---|---|
| Theory | Practical |
| 2 | 2 |

## Teaching Plan

While teaching this chapter, tell the students that although Word is a word processor, yet it allows three types of graphics to work upon – Shapes, WordArt and Pictures.

Familiarise the students with various categories of Shapes under Illustrations group of Home tab explaining use of Lines, Basic Shapes, Flowchart, Stars and Banners and Callouts.

Demonstrate to the students the steps involved in the process of:

- Drawing a shape

- Adding text to the shape

Tell the students the various types of modifications that can be done on the Formating shape – changing fill colour and outline colour, adding shape effects like 3-D rotation and bevel effect.

Introduce WordArt as application to create text effects which are not possible through text formatting.

Demonstrate to the students the steps to:

- Insert WordArt in a document

- Insert Pictures (from a file)

- Insert Symbols (punctuations or special characters not found on keyboard)

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

## Extension

Ask the students some oral questions based on this chapter.

Q. Name any three categories of Shapes in Word 2021.
Q. What do you mean by formatting a shape?
Q. What does Add Text option do?
Q. What does Bevel do?
Q. Define Symbols.

## Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 55 to 57 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on pages 57 and 58 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Tangible Task and Digital Drills given on page 58 of the main course book will enhance the ability of the students and serve as a Interdisciplinary and Creativity & Innovativeness, Art Integration activity.

Encourage the students to do Project Work A given at the end of the main course book.

## Suggested Activity

Ask the students to write a paragraph in Word 2019 on 'Festivals of India'. The paragraph must be supported with relevant pictures.

# 5  Presentation Software—Special Effects

## Teaching Objectives

Students will learn about

- Using Built-in Templates
- Specifying Alignment
- Inserting WordArt
- Inserting SmartArt
- Enhancing the Look of a Presentation
- Inserting Pictures
- Inserting Shapes
- Running a Slide Show

## Teaching Plan

While teaching this chapter, tell the students that PowerPoint 2021 is a program that allows creating interesting and exciting presentations.

| Number of Periods ||
|---|---|
| Theory | Practical |
| 3 | 2 |

Introduce slide layout as arrangement of text, image, ClipArts, charts, etc. on a particular slide. Share with the students the names of some commonly used slide layout options.

Explain the student Using Built-in Templates in PowerPoint templates are pre-designed presentations that provide a consistent design, layout, and colour scheme. They help you quickly create professional presentations by simply modifying the text.

Tell the students that Enhance presentations by customising themes with colour, font, and background changes.

Explain the student Alignment positions text on a slide as left, right, center, or justified for a neat appearance.

Introduce the Inserting pictures using the file, online, placeholder.

Tell the students WordArt offers stylish text effects to make slides more attractive and colourful, providing options beyond standard font formatting.

Explain to the students Inserting shapes and PowerPoint provides pre-designed shapes, called auto shapes, to easily enhance your slides.

Explain the smartArt in PowerPoint helps present concepts as diagrams or lists with customisable designs. Insert it via the Insert tab and modify using SmartArt Tools.

Tell the student the Slide Show tab in PowerPoint lets you preview your presentation by choosing From Beginning or From Current Slide. Use the mouse to navigate slides during the show.

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

## Extension

Ask the students some oral questions based on this chapter.

Q.  How to enhance the look of a presentation?

Q. What are the four main types of text alignment in PowerPoint?

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

Q. Which PowerPoint feature helps present concepts as diagrams and lists?

Q. What are the two options available in the Slide Show tab to preview a presentation?

## Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 73 to 75 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 76 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 76 of the main course book will enhance the ability of the students and serve as a Creativity & Innovativeness activity.

Encourage the students to do Project Work C given at end of the main course book.

## Suggested Activity

Create a presentation on the topic "Are we conserving natural resources?". Use pictures to increase the effectiveness of the presentation.

# 6 An Introduction to Scratch Programming

## Teaching Objectives

Students will learn about

- ✦ Program and Programming Languages
- ✦ Choosing a Sprite
- ✦ Deleting the Sprite
- ✦ Scratch Blocks
- ✦ Creating a New Project
- ✦ Opening an Existing Project
- ✦ Starting Scratch
- ✦ Resizing a Sprite
- ✦ Choosing a Backdrop
- ✦ Full Screen Mode
- ✦ Saving the Project
- ✦ Exiting Scratch

| Number of Periods | |
|---|---|
| Theory | Practical |
| 3 | 2 |

## Teaching Plan

While teaching this chapter, tell the students that Scratch is a block-based programming language.

Explain the student Program and Programming Languages involve creating instructions in computer languages, using specific syntax, to communicate tasks to the CPU efficiently.

Tell the student computer languages are divided into low-level languages, tailored to specific machines, and high-level languages, which are versatile and user-friendly.

Demonstrate to the students the steps to start Scratch 2.0.

Make the students understand the features of Scratch.

Familiarise the students with the various components of Scratch window covering Title bar, Menu bar, Block panel, Tabs, Go button, Stop button, Blocks palette, Coding area, Script, Stage area, Sprite, Backdrop and Sprites info pane.

Explain  the student change a sprite in Scratch by selecting one from the Scratch Library, using options like Upload, Paint, Surprise, or Choose a Sprite.

Show to the students the steps to:

- Choose a sprite from the Library

- Resize a sprite

- Delete a sprite

Make the students recall backdrop as background of the stage.

Tell the students the steps to change the backdrop in Scratch.

Introduce Scratch blocks as puzzle-piece shapes that are used to create code in Scratch.

Introduce Motion Blocks for changing position, direction, rotation and movement of sprites.

Tell the students the method of identifying Motion Blocks which are colour coded as blue.

Explain the use of Events Blocks as used to sense events that run the script and their identifying colour code as yellow.

Share the use of Control Blocks as used to control the scripts and their identifying colour code as amber.

Tell the students about the use of Sound Blocks as used to control sound, its playback and volume and their identifying colour code as pink.

Share the uses of Pen blocks, added via the Add Extension button, allow sprites to draw patterns and adjust line colour and thickness, their identifying colour code as green.

Make the students aware about the full screen mode available in Scratch.

Show to the students the steps to:

- Create a new project

- Save a Scratch project

- open an existing project

- Exit the project

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

### Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. What are the features of Scratch?

Q. Name the various components of Scratch window.

Q. Define Sprite / Stage / Scripts Area / Stop button.

Q. Which buttons icons are used to resize a sprite?

Q. What is a backdrop in Scratch?

Q. What are Scratch blocks?

Q. What is the use of Motion / Events / Control / Sound blocks?

Q. What is the colour code for Motion / Events / Control / Sound blocks?

Q. What are the steps to save a project in Scratch?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 87 to 89 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 89 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Digital Drills given on page 90 of the main course book will enhance the ability of the students and serve as a Coding & Computational Thinking activity.

### Suggested Activity

Ask the students to develop the story of thirsty crow in Scratch.

## 7 Internet Services

### Teaching Objectives

Students will learn about

✦ Requirements to Connect to the Internet     ✦ Ways to Connect to the Internet

✦ Services on Internet     ✦ Netiquettes

### Teaching Plan

While teaching this chapter, tell the students that a computer network is a connection between two or more computers.

| Number of Periods | |
|---|---|
| Theory | Practical |
| 3 | 2 |

Introduce Internet as a network in which millions of computers are connected to each other to share information and in an abbreviation of International Network.

Share with the students the various requirements for an internet connection covering computer, telephone/cable line, modem/network card, internet service provider.

Explain the student various ways to connect to the Internet, including dial-up, broadband, Wi-Fi, mobile Internet, and hotspots, each offering unique features and benefits.

Tell the student Internet provides services like e-mail, online shopping, chatting, video conferencing, and social networking for communication, convenience, and connection.

Explain the student Netiquettes, or Network Etiquettes, are rules for proper online behaviour, including guidelines for email and social networking to ensure respectful and secure communication.

Ensure that the scope of Teacher's Truff 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 computer network?

Q. What is internet?

Q. What are the requirements for an internet connection?

Q. Which is the most common Web Browser?

Q. What are the different ways to connect to the Internet?

Q. What are some common services provided by the Internet?

Q. What is Netiquetts?

## Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 96 to 99 of the main course book as Tech Trivia and Answer Arcade. After solving the course book exercises, tell the students to solve Code Clues activity given on page 99 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Tangible Task and Digital Drills given on page 100 of the main course book will enhance the ability of the students and serve as a Experiential Learning and Art Integration activity.

## Suggested Activity

Ask the students to paste a picture of Internet Explorer in their computer notebook / practical file and label its components and tools discussed in the chapter.