TOUCHPAD

iPLUS (Ver. 2.1)

5

Teacher's Manual

Extended Support for Teachers

ORANGE
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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

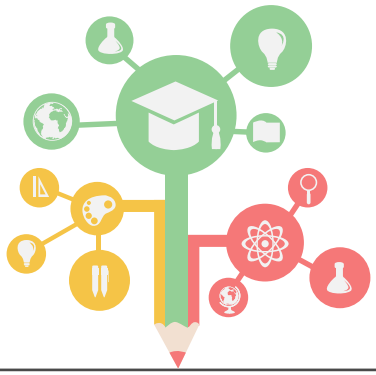
Age 11 - 20 Years

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.

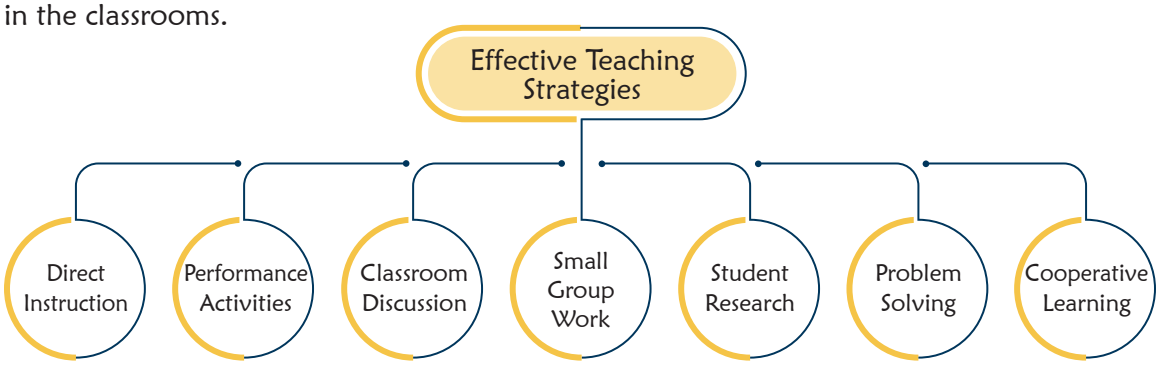
After the class

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

"Knowing yourself is the beginning of all wisdom."

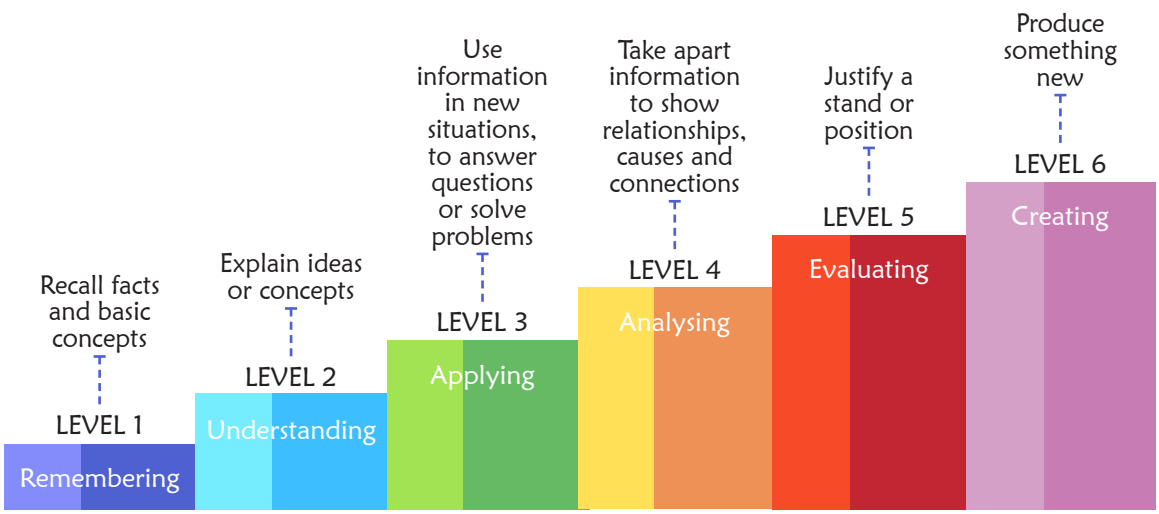
Teaching Strategies

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 5

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

Number of Periods
Theory
2

Teaching Plan

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 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)

Ensure that the scope of **Teacher's Corner** 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.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 16 to 18 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 18 of the main course book to imbibe Problem Solving & Logical Reasoning skills in them. Help the students to solve these questions.

In Creative Assignment, activities like **Let's Explore** and **Practical Time** given on page 18 and 19 of the main course book will enhance the ability of the students and serve as Experiential Learning, Ethical & Moral Reasoning and Communication activity.

Suggested Activity

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

2 Types of 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
1	1

Teaching Plan

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

Tell the students that the parts of the computer that can be touched are called hardware.

Share some examples of hardware with the students.

Make the students understand that the software refers to step-by-step instructions for the computer.

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.

Tell the students about some commonly used system software / operating system and their versions. Explain the importance of application software to the students.

Share with students some examples of application software (covering Paint, Windows Media Player, Word, PowerPoint and Adobe Photoshop) and the purposes for which these software are mainly used.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define hardware.
Q. Name some hardware devices.
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.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 28 to 30 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 30 of the main course book to imbibe Problem Solving & Logical Reasoning skills in them. Help the students to solve these questions.

In Creative Assignment, activity like **Let's Explore** and **Practical Time** given on page 31 of the main course book will enhance the ability of the students and serve as Experiential Learning, Communication and Digital Literacy 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 Processor

Teaching Objectives

Students will learn about

- Text Formatting Tools
- Text Editing Tools
- Page Formatting Tools

Number of Periods	
Theory	Practical
2	3

Teaching Plan

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

Tell the students that font is the look of the alphabet on the screen

Introduce highlighting feature of Word as marking important text and placing a coloured rectangle over it.

Share with the students about the Bold, Italic and Underline features and the method of applying these features to the text.

Introduce Change Case feature as changing text to upper, lower and other common capitalizations.

Demonstrate to the students the method of:

- Using format painter
- Applying superscript and subscript
- Applying text effects

- Changing text alignment
- Applying shadow effect
- Applying borders
- Applying artistic borders
- Applying shading

Introduce various text editing tools to the students.

Demonstrate to the students the method of:

- Use find and replace to find a particular word or phrase or to substitute all or only selected occurrences

Introduce various page formatting tools to the students.

Demonstrate to the students the method of:

- Using header and footer in a document
- Writing in a single column and to insert column break in Word
- Inserting page break
- Inserting line break
- Use of tab
- Use of indentation
- To set page margin
- To change the orientation of the document
- To set page size

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define font.
Q. What do you mean by highlighting text?
Q. What is bold format of the text?
Q. What is the use of format painter?
Q. Define alignment.
Q. What are the different types of text alignment options?
Q. Why is shading added to text?
Q. What does Change Case option do?
Q. When we need to use superscript and subscript?
Q. How to apply shadow effect?
Q. What is Find and Replace?

Q. Define Header and Footer.

Q. What is the use of Column Break?

Q. What is the difference between Page break and Line break.

Q. Explain Page margin, Page orientation and Page size.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 45 and 46 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 47 of the main course book to imbibe Problem Solving & Logical Reasoning skills in them. Help the students to solve these questions.

In Creative Assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on pages 47 and 48 of the main course book will enhance the ability of the students and serve as Experiential Learning, Creativity & Innovativeness, Art Integration and Digital Literacy activity.

Suggested Activity

Ask the students to collect write a paragraph on My Favourite Sport in Word 2016 applying various formatting features to make the paragraph attractive.

4 Graphics in Word 2016

Teaching Objectives

Students will learn about

- Shapes
- Inserting Pictures
- Inserting WordArt
- Inserting Symbols

Number of Periods	
Theory	Practical
1	3

Teaching Plan

While teaching this chapter, tell the students that Word 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 into the shape

Tell the students the various types of modifications that can be done on the inserted shape—changing outline color, changing fill colour, adding shape effects like 3-D rotation effect 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 Online Pictures
- Insert Symbols (punctuations or special characters not found on keyboard)

Ensure that the scope of **Teacher's Corner** 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 2016.

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 56 to 58 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 59 of the main course book to imbibe Problem Solving & Logical Reasoning skills in them. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on page 59 and 60 of the main course book will enhance the ability of the students and serve as Experiential Learning, Creativity & Innovativeness and Art Integration activity.

Suggested Activity

Ask the students to write a paragraph in Word 2016 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
- Enhancing the Look of a Presentation
- Inserting Pictures

- Inserting WordArt
- Inserting SmartArt
- Inserting Shapes
- Running a Slide Show

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that slide is a collection of text, graphics, audio, videos, etc.

Introduce the built-in templates to the student and explain how to enhance the look and feel of a presentation by applying various formatting styles, such as bold, italics, and underline, and applying themes.

Demonstrate to the students the steps involved in choosing a theme, changing theme color schemes, theme fonts, and backgrounds.

Tell the students that alignment helps to align the text of the slide in various directions.

Explain the four main types of alignment: align left, align right, center, and justify.

Tell the students that just like in Word document, WordArt can be added in a PowerPoint slide also.

Show to the students that the steps involved in Word and PowerPoint are almost similar. Similarly, demonstrate to the students that Shapes and Pictures from other files can also be added to a slide just like those inserted in Word.

Ensure that students get to know that they can insert pictures from various options available, such as from a file, online, or using placeholders.

Demonstrate to the students the steps to:

- Insert WordArt in a document
- Insert Shapes
- Insert SmartArt

Also, show them how to resize the shape and fill it with colour.

Introduce SmartArt as a visual representation of information and ideas through graphics, lists and designs which contain text.

Tell the students that the Slide Show tab will let you set up how your show will progress.

Demonstrate to the students how to run the slide show.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define theme.

Q. What is alignment?

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

Q. Can we resize a shape in PowerPoint?

Q. Name any two categories of SmartArt graphics.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 74 to 76 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 76 of the main course book to imbibe Experiential Learning and Digital Literacy skills in them. Help the students to solve these questions.

In creative assignment, activity like **Let's Explore** and **Practical Time** given on page 77 of the main course book will enhance the ability of the students and serve as Interdisciplinary and Environmental Awareness activity.

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

Number of Periods	
Theory	Practical
2	3

Teaching Plan

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

Demonstrate to the students the steps to start Scratch 3.0.

Tell the students what a program is.

Tell them about programming languages and the major categories of computer languages.

Make the students understand the features of Scratch.

Familiarise the students with the various components of Scratch window covering Title bar, Sprite, Stage area, Blocks Panel, Blocks Palette, Coding area, Go button, Stop button, Menu bar, Sprites Info Pane, Script, Backdrop and Tabs (Code tab, Costumes tab and Sounds tab).

Show to the students the steps to:

- Choose a sprite from the Library
- Delete a sprite
- Resize 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 placement, 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 gold.

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.

Demostrate the steps to add the Pen block to the block category.

Tell the students the method of identifying Pen Blocks which are colour coded 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 a project
- Exit Scratch

Ensure that the scope of **Teacher's Corner** 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 program?

Q. What is a computer language?

Q. Who are programmers?

Q. What is low-level language?
Q. What is high-level language?
Q. What is Scratch?
Q. What are the features of Scratch?
Q. Name the various components of Scratch window.
Q. Define Sprite / Stage Area / Coding Area / Go button / 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 / Pen blocks?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 88 to 90 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 91 of the main course book to imbibe Problem Solving & Logical Reasoning skills in them. Help the students to solve these questions.

In creative assignment, activity like **Let's Explore** and **Practical Time** given on page 91 and 92 of the main course book will enhance the ability of the students and serve as Experiential Learning and 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
- Services on Internet
- Way to Connect to the Internet
- Netiquettes

Number of Periods
Theory
2

Teaching Plan

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

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, software and company providing the connection.

Introduce the students various ways to connect to the Internet like:

- Dial-up
- Broadband Connection
- Wi-Fi
- Mobile Internet
- Hotspot

Familiarise the students with the services on Internet like E-mail, Online Shopping, Online Chatting, Video Conferencing and Social Networking.

Make the students understand the Network Etiquettes.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is internet?

Q. What is network?

Q. What are the requirements for an internet connection?

Q. Define e-mail.

Q. What are various ways to connect to the internet?

Q. Give two examples of online shopping websites and video conferencing apps.

Q. What are netiquettes?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 98 and 99 of the main course book as **Exercise**. After solving the course book exercises, tell the students to solve **Crack The Code** activity given on page 100 of the main course book to imbibe Problem Solving & Logical Reasoning skills in them. Help the students to solve these questions.

In creative assignment, activities like **Let's Explore**, **Be Creative** and **Practical Time** given on pages 99 and 100 of the main course book will enhance the ability of the students and serve as Experiential Learning, Ethical & Moral reasoning, Art Integration and Collaboration & Teamwork activity.

Suggested Activity

Ask the students to paste a pictures of various things required for connecting a computer in their computer notebook / practical file and label its components and tools discussed in the chapter.