TOUCHPAD

Ver. 2.2

5

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

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."

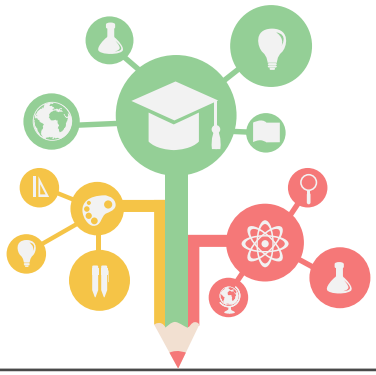
Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/ 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.

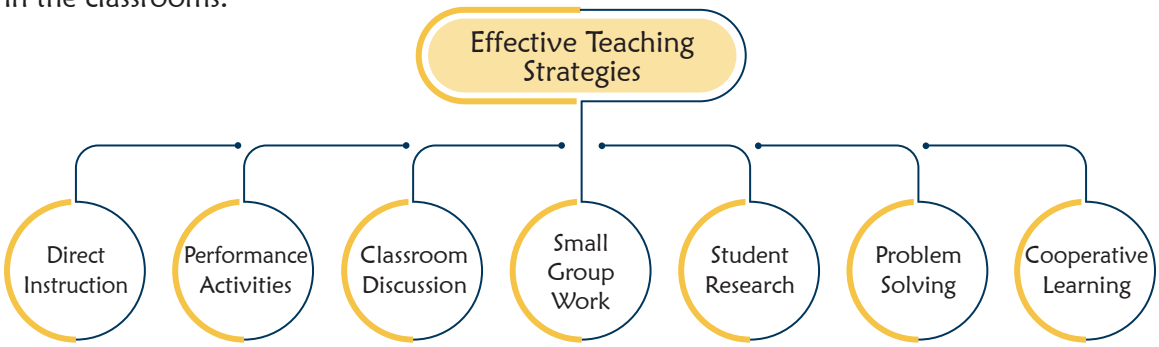
After the class

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

"Knowing yourself is the beginning of all wisdom."

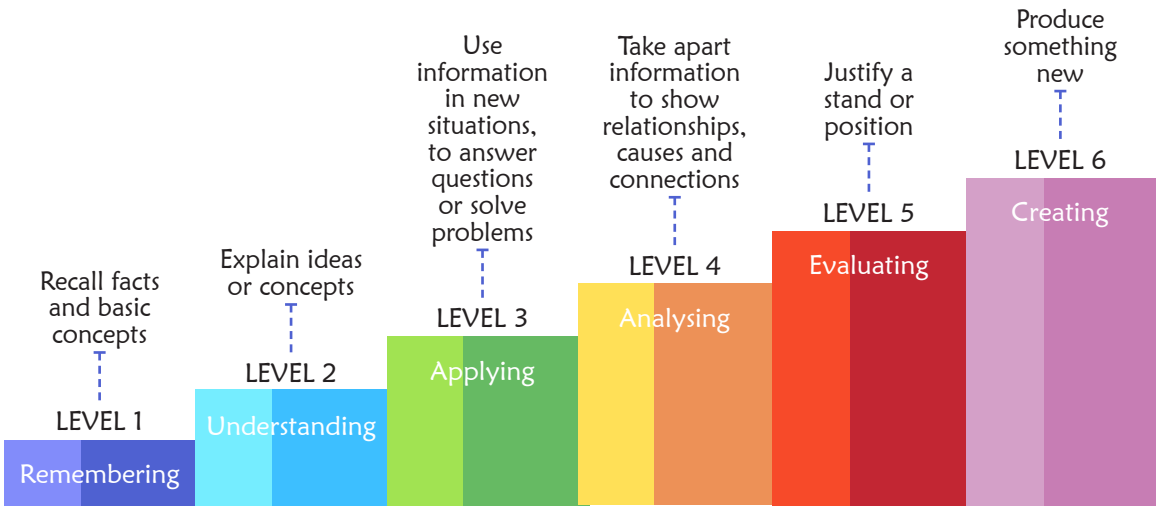
Teaching Strategies

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	Practical
1	1

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 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 she was the first one to program in 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 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 (1940-1955) – MARK-I, ENIAC, UNIVAC
- Second Generation (1956-1964) – Transistors
- Third Generation (1965-1975) – Integrated Circuits
- Fourth Generation (1976-1985) – Microprocessor, IBM PC
- Fifth Generation (1986-Present) – Artificial Intelligence

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 15, 16 and 17 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 17 and 18 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands-On and Fun in Lab given on Page 18 of the main course book will enhance the ability of the students and serve as a Subject Enrichment 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
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 27, 28 and 29 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 29 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Fun in Lab given on Page 29 of the main course book will enhance the ability of the students and serve as a Subject Enrichment 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 2016

Teaching Objectives

Students will learn about

- Text formatting tools
- Page formatting tools
- Text editing tools

Number of Periods	
Theory	Practical
3	2

Teaching Plan

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

Share with the students the default font and font size in a Word 2016 document.

Demonstrate the students the method of changing font and font size.

Tell the students format painter, superscript and subscript, shadow effect, border and artistic border in text formatting.

Introduce the text editing tools.

Show to the students the steps involved in editing text.

Share with the students about the page formatting tools.

Tell the students about page formatting like Header and Footer, Column and Column Break, Page Break, Line Break, Tab, Indentation, Page Margin, Page Orientation, 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 formatting a text.

Q. What is the default font / font size of text in a Word 2016 document?

Q. What do you mean by editing text?

Q. What do you mean by Page Formatting?

Q. What is the use of header and footer?

Q. Define page orientation.

Q. What is the difference between column break and line break?

Q. What is the use of indentation?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 45, 46 and 47 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 47 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands-On and Fun in Lab given on Page 48 of the main course book will enhance the ability of the students and serve as a Subject Enrichment 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
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.

Familiarize 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 inserted shape – changing outline color, changing fill colour, adding shape effects like 3-D rotation and bevel.

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

Demonstrate the students the steps to:

- Insert WordArt in a document
- Insert Pictures (from a file)
- Insert Online Pictures (from the web)
- 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, 57 and 58 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Pages 58 and 59 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands On and Fun in Lab given on Page 59 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

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

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
- Inserting wordArt
- Inserting smartArt
- Enhancing the look of a presentation
- Inserting pictures
- Inserting shapes
- Running a slide show

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that PowerPoint 2016 is a program that allows creating interesting and exciting presentations.

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.

Demonstrate the students the steps involved in changing the slide layout.

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

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

Introduce SmartArt as a diagrammatic representation of some information.

Tell the students about different types of SmartArt diagrams and the situations when each of them is used.

Explain the students the names of different types of slide views in PowerPoint covering Normal View, Outline View, Slide Sorter View and Reading View.

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 slide layout.

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

Q. When is List / Process / Hierarchy / Matrix SmartArt used?

Q. When is Normal / Outline / Slide Sorter / Reading View used?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 74 and 75 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 76 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Fun in Lab given on Pages 76 and 77 of the main course book will enhance the ability of the students and serve as a Subject Enrichment 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 & programming language
- Changing the Appearance of a Sprite
- Resizing the sprite
- Scratch blocks
- Saving the project
- Starting Scratch
- Deleting a sprite
- Choosing a backdrop
- Full screen mode
- 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.

Demonstrate the students the steps to start Scratch 3.

Make the students understand the features of Scratch.

Familiarize the students with the various components of Scratch window covering Sprite, Stage, Backdrop, Blocks palette, Sprites Info Pane, Coding area, Script, Go Button, Stop button Tabs, and Menu Bar.

Show the students the steps to:

- Change the appearance of a sprite
- Delete a sprite
- Resize a sprite

Make the students recall backdrop as background of the stage.

Tell the students the steps to choose a 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.

Demonstrate the use of Motion Blocks by developing My First Script (refer Page 84 of the main course book).

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 dark pink.

Help the students in developing My Second Script.

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

Show to the students the steps to:

- Save a Scratch 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 Scratch?

Q. What are the features of Scratch?

Q. Name the various components of Scratch window.

Q. Define Sprite / Stage / Scripts Area / Green Flag / 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, 88 and 89 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 89 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Fun in Lab given on Page 90 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

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

Suggested Activity

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

7 Internet Services

Teaching Objectives

Students will learn about

- Requirements for an internet connection
- Services on Internet
- Ways to Connect to the internet
- Netiquettes

Number of Periods	
Theory	Practical
1	1

Teaching Plan

While teaching this chapter, 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.

Explain the students the requirements to connect to internet.

Share with the students the various ways to connect to the Internet covering Dial-Up, Broadband Connection ,Wi-Fi, Mobile Internet, Hotspot.

Introduce the students to the various services on Internet like:

Website (collection of related web pages), Web Page (electronic page on a website)

Email (send or receive electronic messages).

Online Shopping (use to buy various products online).

Online Chatting (use to chat online).

Video Conferencing (live video meeting between two people).

Social Networking (allows people with common interests to connect with each other through websites)

Familiarise students with netiquettes that are expected to be followed while meeting others or communicating with others

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 computer network?

Q. What is internet?

Q. What are the uses of internet?

Q. What are the requirements for an internet connection?

Q. Define Website / Web Page / Home Page / World Wide Web / Web Browser.

Q. What does WWW stand for?

Q. Which is the most common Web Browser?

Q. Define Title Bar / Menu Bar / Toolbar / Address Bar.

Q. What is the use of Back / Forward / Stop / Refresh button in a web browser?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 95, 96 and 97 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Pages 97 and 98 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands On and Fun in Lab given on Page 98 of the main course book will enhance the ability of the students and serve as a Subject Enrichment 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.