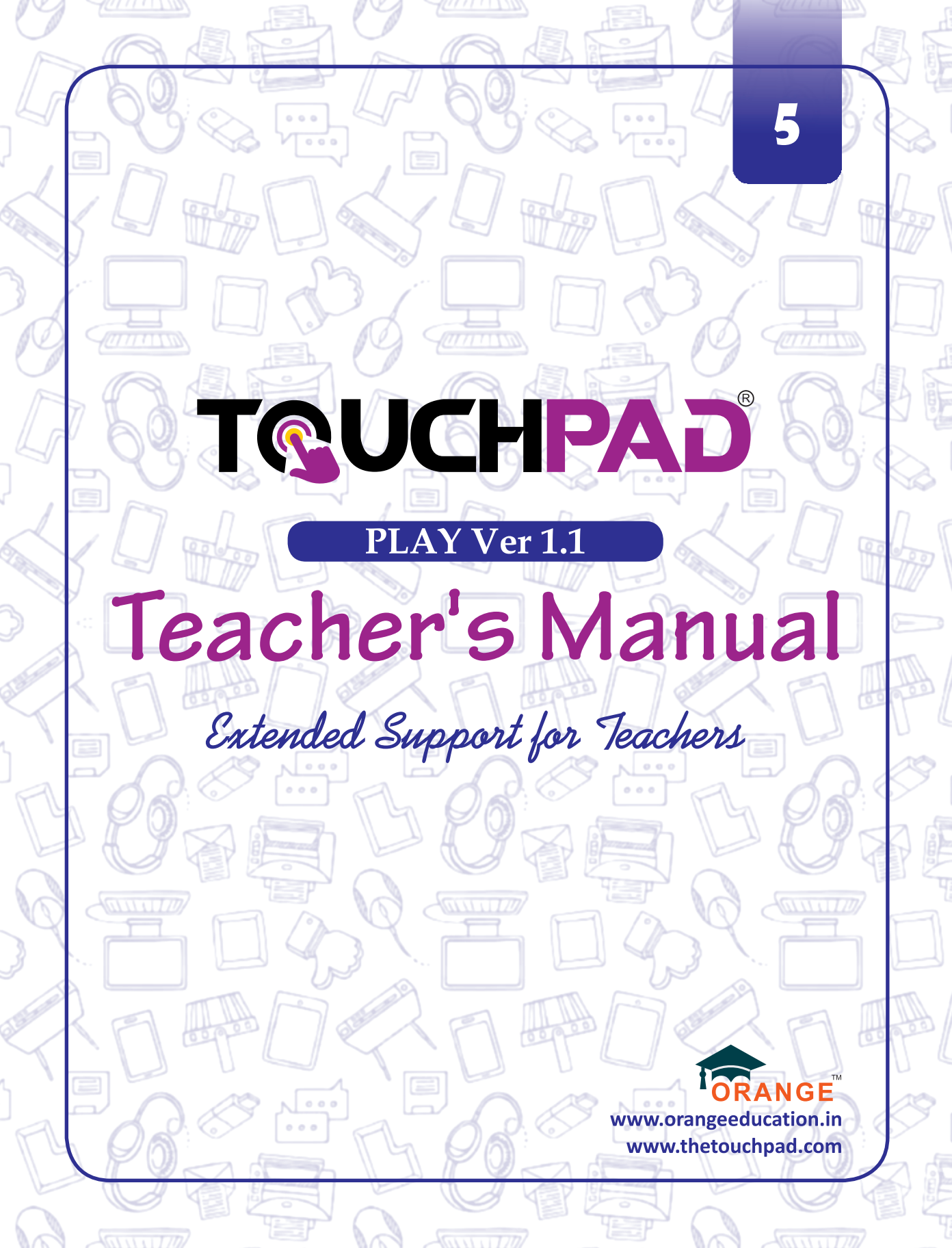




# TOUCHPAD<sup>®</sup>

PLAY Ver 1.1

## Teacher's Manual

*Extended Support for Teachers*



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

# Teacher's Time Table

.....

| Periods<br>Days | 0 | I | II | III | IV | V | VI | VII | VIII |
|-----------------|---|---|----|-----|----|---|----|-----|------|
| Monday          |   |   |    |     |    |   |    |     |      |
| Tuesday         |   |   |    |     |    |   |    |     |      |
| Wednesday       |   |   |    |     |    |   |    |     |      |
| Thursday        |   |   |    |     |    |   |    |     |      |
| Friday          |   |   |    |     |    |   |    |     |      |
| Saturday        |   |   |    |     |    |   |    |     |      |

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# DEVELOPMENT MILESTONES IN A CHILD

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher to identify and understand how children differ in different age groups.

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

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

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

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

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.



“Family is the most important thing in the world.”



# TEACHING PEDAGOGIES

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

## Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

### Before the class:

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.



### During the class:

Present the lesson plan.



### After the class:

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

"Knowing yourself is the beginning of all wisdom."

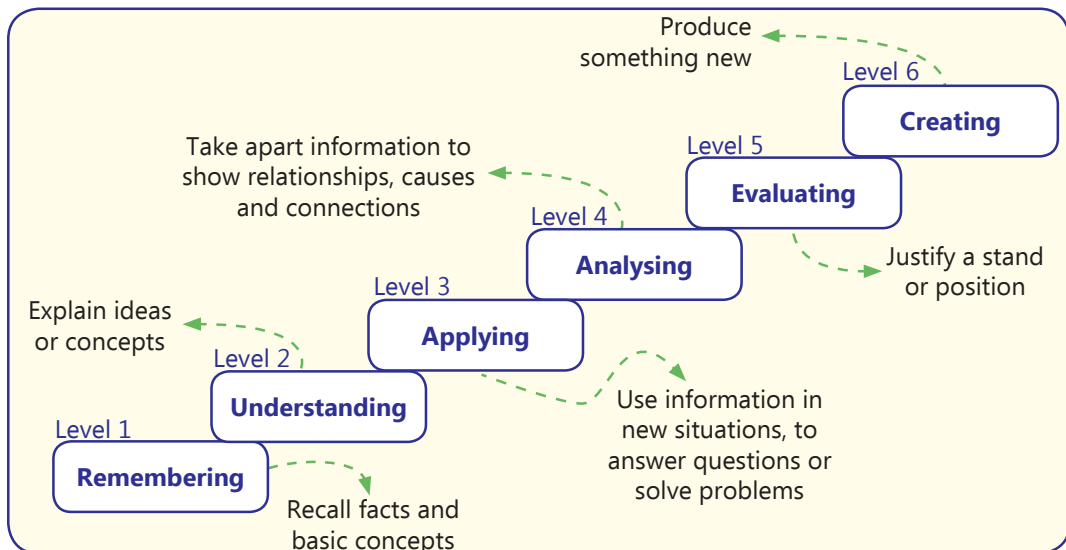
## Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



## Bloom's Taxonomy

Bloom's Taxonomy was created by **Dr Benjamin Bloom** and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students 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

Touchpad PLAY Ver 1.1

Class-5

## 1. Evolution of Computers

### Teaching Objectives

Students will learn about

- |                                         |                                   |
|-----------------------------------------|-----------------------------------|
| ☞ Early Counting Tools                  | ☞ Abacus—First Calculating Device |
| ☞ Pascaline Adding Machine              | ☞ Leibniz Step Reckoner           |
| ☞ Charles Babbage's Analytical Engine   | ☞ Lady Ada Lovelace's Programs    |
| ☞ Herman Hollerith's Tabulating Machine | ☞ Computer Generations            |

### Teaching Plan

**Number of periods: 2**

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 (1940-1955) – MARK-I, ENIAC, UNIVAC
- Second Generation (1956-1964)
- Third Generation (1965-1975)
- Fourth Generation (1976-1985)
- Fifth Generation (1986-Present) (See Suggested Activity also)

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 14 and 15 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 16 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. Working with Windows 7

### Teaching Objectives

Students will learn about

- |                                                                                                                  |                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|  Files and Folders            |  Windows Explorer              |
|  Organizing Files and Folders |  Creating a New File or Folder |
|  Opening Files or Folders     |  Selecting Files or Folders    |





- ☞ Copying and Moving Files or Folders
- ☞ Deleting a File or Folder
- ☞ More on Windows 7
- ☞ Renaming a File or Folder
- ☞ Restoring a Deleted File or Folder

## Teaching Plan

**Number of periods: 4**

While teaching this chapter, tell the students that all the data saved on a hard disk consists of files and folders.

Introduce file as an item that contains a collection of related information, a folder as a collection of files and a sub folder as a folder within a folder.

Introduce to the students the Windows Explorer as a file manager that manages files and folders.

Demonstrate to the students the steps to open Windows Explorer.

Familiarize the students with the various components of Windows Explorer covering Toolbar, Navigation pane, File List pane, Status bar, Address bar, Search, Back and Forward.

Tell the students that Windows 7 has some default folders to organize similar files.

Demonstrate to the students the steps to:

- Open a file and a folder
- Select a file and a folder (including selecting a single file, selecting multiple files, selecting all files and deselecting a file)
- Copying a file and a folder (using Copy-Paste features)
- Moving a file and a folder (using Cut-Paste features)
- Creating a new file and a folder
- Renaming a file and a folder
- Deleting a file and a folder
- Restoring a file and a folder

Share with the students some new features of Windows 7 covering:

- Touch screen (just like android touch screen mobile phones)
- Jump List (jump directly to documents, pictures, songs or websites used frequently)
- Sneak ( shows you on the Taskbar a preview of the windows that are opened).

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 file / folder / subfolder?
- Q. Define a computer icon.
- Q. What is Windows Explorer?
- Q. Name the default folders of Windows 7 for organizing data.
- Q. Which key is used to select multiple files?
- Q. Which key is pressed to invert the selection?
- Q. What is the difference between copying a file and moving a file?
- Q. What is Sneak feature of Windows 7?



## Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 26, 27 and 28 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 28 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 features of Windows 7 other than those discussed in the chapter.

# 3. Graphics in MS Word 2010

## Teaching Objectives

Students will learn about

- ✎ Shapes
- ✎ Inserting Pictures
- ✎ Inserting WordArt
- ✎ Inserting Symbols

## Teaching Plan

**Number of periods: 4**

While teaching this chapter, tell the students that although MS 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 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 ClipArt (pre-designed pictures of MS Word 2010)
- Insert Pictures (from a file) (See Suggested Activity also)
- 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 MS Word 2010.
- Q. What do you mean by formatting a shape?



- Q. What does Add Text option do?
- Q. What does Bevel do?
- Q. What is ClipArt?
- Q. Define Symbols.

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 37, 38 and 39 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 39 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 the end of the main course book.

### Suggested Activity

Ask the students to write a paragraph in MS Word 2010 on 'Festivals of India'. The paragraph must be supported with relevant pictures.

## 4. Page Formatting in MS Word 2010

### Teaching Objectives

Students will learn about

- |                           |                     |
|---------------------------|---------------------|
| ☞ Artistic Border         | ☞ Header and Footer |
| ☞ Column and Column Break | ☞ Page Break        |
| ☞ Line Break              | ☞ Tabs              |
| ☞ Indentation             | ☞ Page Margin       |
| ☞ Page Orientation        | ☞ Page Size         |

### Teaching Plan

**Number of periods: 4**

While teaching this chapter, tell the students that formatting refers to the appearance of a document. Tell the students that a particular word or phrase in a document can be looked for with the help of Find feature.

Tell them that MS Word can go one step ahead and can replace that particular word or phrase by another word or phrase as required by the user using the Replace feature.

Demonstrate the steps to use Find and Replace features.

Explain to the students that line spacing means the blank space between two lines in a paragraph. Further tell them that the paragraph spacing means the blank space between two consecutive paragraphs in a document.

Activity can be created on the Orientation as Take two printouts in different orientations and display them in front of the class to demonstrate the difference between orientations.

Tell the students that page margin is the white space all around the printed area of the paper.

Make the students understand how they can modify page margin settings for their document.

Introduce to the students the concept of orientation as the side of the paper along which the content of the document will be printed.

Tell the students about different types of orientations.

Show to them the steps involved in changing the page orientation in a document.

Introduce the term watermark as the faded text or image behind the main text of the document.

Demonstrate the steps involved in inserting text and image as watermarks in your document.

Show to the students the main course book where book name and chapter name are appearing at the bottom of each page. Tell the students that this is called Footer of a page.

Make them understand that if the same or some other text appears on top of each page, it is called Header.

Demonstrate the steps involved in adding header and footer to a text document and tell them the various type of information can be shown as header and footer.

Make the students that mathematical equations can be easily inserted in a document.

Show to the students the steps involved in inserting mathematical equations.

Make the students understand the steps involved in inserting a SmartArt in Word are same as those discussed in inserting a SmartArt in PowerPoint.

Introduce to the students Mail Merge as the feature used to create personalized letters to be sent to many persons.

Tell them the various steps involved in creating a mail merge (refer Suggested Activity also).

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 the difference between Find and Replace features?
- Q. What is the meaning of Line Spacing?
- Q. What is the meaning of Paragraph Spacing?
- Q. What do you mean by page orientation?
- Q. What are page margins?
- Q. Define a watermark.
- Q. What is the difference between header and footer in a document?
- Q. Which tab is used to add header/footer to a document?
- Q. What do you mean by Mail Merge?
- Q. How is mail merge helpful?

## Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 47 and 48 as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 48 will enhance the ability of the students and serve as Subject Enrichment activities.



## Suggested Activity

Ask the students to create an electronic invitation (personalized) for inviting middle school teachers to a thank you performance organized by Grade 6-8 students.

# 5. Introduction to MS PowerPoint 2010

## Teaching Objectives

Students will learn about

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| ☞ Starting MS PowerPoint 2010        | ☞ Components of PowerPoint Window |
| ☞ Creating a New Presentation        | ☞ Entering Data on the Slide      |
| ☞ Adding New Slide to a Presentation | ☞ Deleting a Placeholder          |
| ☞ Deleting a Slide                   | ☞ Viewing Slide Show              |
| ☞ Saving a Presentation              | ☞ Exiting PowerPoint              |

## Teaching Plan

**Number of periods: 5**

While teaching this chapter, tell the students that Microsoft PowerPoint 2010 is a part of Microsoft Office 2010 package or suite.

Share with the students that it is used to create presentations.

Demonstrate to the students the steps to start MS PowerPoint 2010.

Familiarize the students with various components of PowerPoint screen covering Title Bar, Ribbon, Quick Access Toolbar, File Tab, Slide, Placeholder, Slides / Outline Pane and Status Bar.

Introduce slide as a single page of a presentation.

Demonstrate the steps to:

- Create a new presentation
- Enter data on a slide in title and subtitle placeholders
- Add new slide to a presentation
- Deleting a placeholder
- Deleting a slide

Introduce slide show as full screen view of the presentation.

Show to the students the method of viewing a slide show.

Tell the students how to:

- Save a presentation
- Exit MS PowerPoint 2010

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 MS PowerPoint 2010?

Q. Define Title Bar / Status Bar.

- Q. What do you mean by Ribbon / Placeholder?
- Q. What is a slide in a presentation?
- Q. Which key is pressed to delete a selected placeholder?
- Q. What are the various ways in which a slide show can be started?
- Q. What are the steps to exit MS PowerPoint 2010?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 55, 56 and 57 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 57 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 create a presentation on 'The Cartoon Character I Like The Most'.

## 6. Managing Slides in MS Power Point 2010

### Teaching Objectives

Students will learn about

- ☞ Slide Layout
- ☞ Inserting ClipArt
- ☞ Inserting SmartArt
- ☞ Rotating Objects
- ☞ Arrangement of Slides in Slide Sorter View
- ☞ Inserting WordArt
- ☞ Inserting a Picture
- ☞ Moving an Object
- ☞ Applying Shadow Effect

### Teaching Plan

Number of periods: 4

While teaching this chapter, tell the students that Microsoft PowerPoint 2010 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 to 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 to the students that the steps involved in MS Word and MS 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 MS 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 to the students the names of different types of slide views in MS 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 68 and 69 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 69 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 MS PowerPoint presentation on the topic "Are we conserving natural resources?". Use pictures to increase the effectiveness of the presentation.

# 7. Game Creation in Scratch

## Teaching Objectives

Students will learn about

- |                        |                      |
|------------------------|----------------------|
| ☞ Create a Simple Game | ☞ Operators          |
| ☞ Variables            | ☞ Conditions         |
| ☞ Sensing Blocks       | ☞ Storing User Input |
| ☞ Loops                |                      |

## Teaching Plan

**Number of periods: 3**

While teaching this chapter, tell the students that Scratch is a block-based programming language. 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 88 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 brown.

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.

Tell the students that Scratch allows changing the appearance of the selected sprite.

Share with the students the various blocks present under Looks category.

Demonstrate to the students the steps to change appearance of a selected sprite.

Tell the students that Scratch allows drawing shapes.

Share with the students the various blocks present under Pen category.

Demonstrate to the students the steps to draw shapes on the stage with the help of a sprite.

Tell the students that decision making can be done by using If...then...Else Control block.

Share with the students that Forever Control block is used to repeat a script continuously.

Make the students understand that Variable blocks are used to store values and strings.

Demonstrate to the students the steps to create variables.

Explain the use and purpose of various Operator blocks under the categories Arithmetic operators (+, -, \*, /), Relational operators (<, >, =) and Logical operators (AND, OR, NOT).

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. Define Sprite / Stage / Scripts Area / Green Flag / Stop button.
- Q. What are Looks blocks?
- Q. What is the use of Pen blocks?
- Q. What is the use of Operators blocks?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 78, 79 and 80 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 80 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 develop the game in Scratch.





## 8. Algorithm and Flowcharts

### Teaching Objectives

Students will learn about

✎ Algorithm

✎ Defining Flowcharts

✎ Writing an Algorithms

### Teaching Plan

**Number of periods: 3**

While teaching this chapter, tell the students that computer needs a special language through which we can communicate with it.

Ask the students to learn some important computer terms like:

- Program – a set of instructions given to CPU in a pre-defined sequence to complete a task.
- Computer language – means by which data and instructions are transmitted to the computer.
- Syntax – the grammar of a computer language.
- Programming – process of writing a program.
- Programmers – people who write computer programs.

Tell the students that computer languages are categorized as low-level languages (machine dependent) and high level languages (machine independent).

Share with the students that low level languages are further classified as machine language (first generation language made up of 0s and 1s) and assembly language (second generation language made up of alphanumeric symbols).

Make the students learn that the high level languages are further classified as third generation languages (examples: BASIC, COBOL, FORTRAN, PASCAL, etc.), fourth generation languages (examples: Visual Basic, Oracle, SQL, JAVA, C++, etc.) and natural language or fifth generation languages (involving artificial intelligence).

Tell the students the advantages and disadvantages of high level languages over low level languages.

Introduce the concept of language translators as software that convert a high level language into a machine language covering:

- Assembler – used to translate assembly language into machine language.
- Compiler – used to convert source program at once into machine language before executing it.
- Interpreter – used to convert source program one line at a time into machine language before executing it.

Introduce algorithms as set of steps in a sequential and ordered manner to solve any problem or to complete a task.

Encourage the students to write algorithms involving some basic tasks like getting ready for school or involving mathematical problems like addition and subtraction of numbers (refer Suggested Activity also).

Introduce flowcharts as diagrammatic representation of an algorithm.

Explain the shapes and usage of flowchart symbols covering Start / Stop box, Process box, Decision box, Input / Output box, Flow lines and Connectors.

Make the students learn the rules for drawing a flowchart.

Encourage the students to draw flowcharts for the algorithms written earlier.

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. Who is a programmer?
- Q. What do you mean by computer language?
- Q. What is the meaning of syntax?
- Q. What are the categories of computer languages?
- Q. Define compiler / interpreter/ assembler.
- Q. What is the purpose of developing algorithms and flowcharts?

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 87 and 88 as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 88 will enhance the ability of the students and serve as a Subject Enrichment activity.

### Suggested Activity

Ask the students to write algorithms and draw corresponding flowcharts to:

- Calculate area of circle,  $A = \pi r^2$
- Calculate Volume of cube,  $V_{\text{cube}} = (\text{side})^3$
- Calculate Volume of cuboid,  $V_{\text{cuboid}} = \text{length} \times \text{breadth} \times \text{height}$

## 9. More on Internet

### Teaching Objectives

Students will learn about

- |                                                                                                                         |                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|  Internet                            |  Uses of Internet |
|  Requirements to Connect to Internet |  Common Terms     |

### Teaching Plan

**Number of periods: 2**

While teaching this chapter, tell the students that computers connected to a network can share data and files efficiently without any delay.

Make the students recall that internet is a global network of millions of computers and computer networks.



Introduce Uniform Resource Locator (URL) as a unique address or website address used for locating websites.

Explain the various uses of internet covering:

- E-mail – an online communication system
- Information – through search engines like Google, Yahoo, etc.
- Online shopping
- Online chatting
- Downloading data
- Uploading data
- Social Networking – Facebook, Instagram, Twitter, YouTube, WhatsApp, etc.

Share with the students the various requirements for an internet connection covering computer system, telephone/cable line, modem, web browser and Internet Service Provider (ISP).

Explain the meaning of some common internet terms like URL, Hyperlink, Offline, Online, Surfing, Website and Web page.

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. What do you understand by Downloading / Uploading data?
- Q. Define URL / Hyperlink / Offline / Online / Surfing / Website / Web Page.

### Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 93, 94 and 95 of the main course book as One Touch Learn and Let's Do It.

In Creative Assignment, activities like Fun in Lab given on Page 95 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 report on some more uses of internet and present the observations to the class.