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TOUCHPAD®

PRIME Ver. 2.1

Teacher's Manual

Extended Support for Teachers

ORANGE™
www.orangeeducation.in
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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 to 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

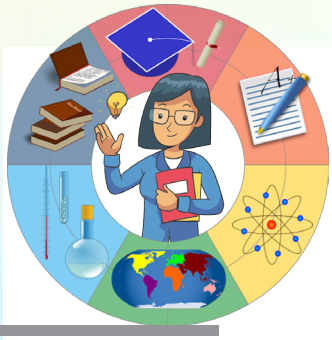
"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years	
Physical	• Motor skills develop resulting 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 needs 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.

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During the class:

Present the lesson plan.

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After the class:

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

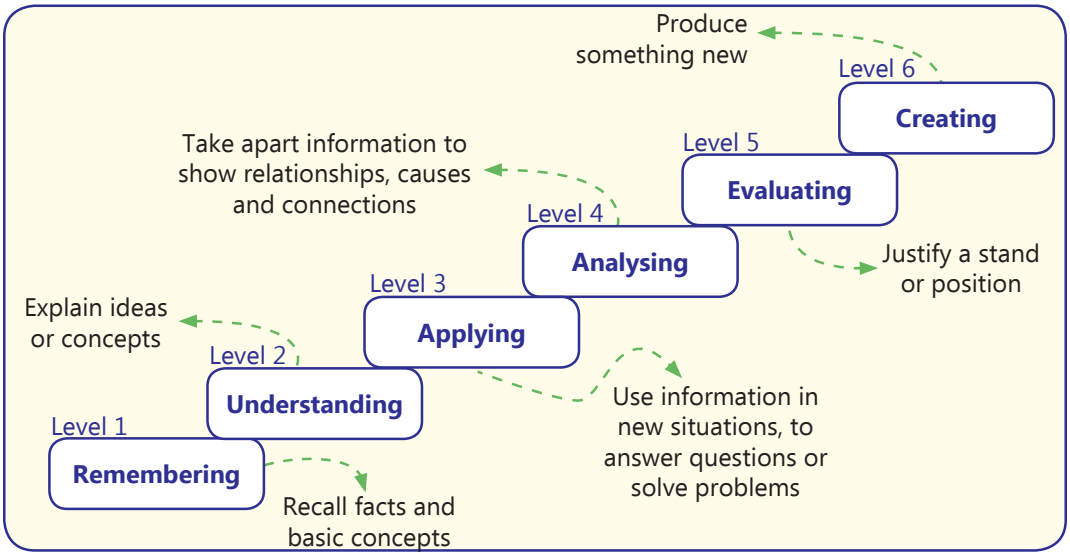
"Knowing yourself is the beginning of all wisdom."

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 PRIME Ver 2.1

Class-5

1. Progression 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)

Ask the students to solve the exercise Warm Up! given on page number 13.

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 Mind Drill given on Page 14, 15 and 16 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 16 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 16 in the main course book. This 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. Building on Files & Folders

Teaching Objectives

Students will learn about

- ☞ Windows 10 Desktop
- ☞ This PC Icon
- ☞ File or Folder

Teaching Plan

Number of periods: 3

While teaching this chapter, tell the students that Windows is a GUI based operating system developed by Microsoft.

Make the students recall desktop as the first screen on which they can work.

Familiarize the students with the components of Windows 10 desktop covering Start button, Icons, Taskbar, and Desktop background.

Make them familiar about This PC icon and its purpose.

Tell the students about File and Folder.

Demonstrate to the students the steps to:

- Selecting a file/folder.
- Creating a file/folder.
- Renaming a file/folder.
- Copying a file/folder.
- Moving a file/folder.
- Deleting a file/folder.
- Searching a file/folder.

Ask the students to solve the exercise Warm Up! given on page number 25.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Windows 10?

Q. Define This PC icon.

Q. What is a file?

Q. What is a folder?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 26 and 27 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 27 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 28 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to make a folder on desktop and add files in the folder. Rename the files in that folder and copy them to some other folder.

3. Advanced Features of Word 2016

Teaching Objectives

Students will learn about

- Spelling and Grammar
- Thesaurus
- Find and Replace Text
- Page Formatting
- Paragraph Formatting
- Mail Merge

Teaching Plan

Number of periods: 4

While teaching this chapter, tell the students that formatting refers to the appearance of a document.

Introduce the students to Spelling and Grammar Check feature of Word.

Show to the students the representation of spelling and grammar mistakes with different colored wavy lines.

Demonstrate to the students the method of using Spelling and Grammar Check feature of Word.

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

Ask the students to solve the exercise warm Up! given on page number 34.

Tell them the various steps involved in creating a mail merge.

Extension

Ask the students some oral questions based on this chapter.

Q. What is the use of Spelling and Grammar check feature?

Q. Which button is pressed to skip errors and continue working during Spelling and Grammar check?

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 do you mean by Mail Merge?

Q. How is mail merge helpful?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 41 and 42 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Pages 42 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 42 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

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.

4. Innovation in Powerpoint

Teaching Objectives

Students will learn about

- ☞ Applying Themes
- ☞ Working with Slide Master
- ☞ Changing the Background
- ☞ Inserting SmartArt
- ☞ Animations Slide
- ☞ Transitions

Teaching Plan

Number of periods: 3

While teaching this chapter, tell the students that PowerPoint 2016 is used to create electronic presentations. Tell the students that a theme is a set of predefined layouts that can be used to add a professional touch to the presentations.

Demonstrate the steps to choose a theme, change theme colours, fonts and backgrounds.

Introduce students with Slide Master and the steps involved in using this action into a presentation.

Show to the students how to insert SmartArt and the steps involved in adding it into a presentation.

Explain to the students that transitions are used to determine how the presentation moves from one slide to the next.

Show to the students how sound and audio files can be inserted into a presentation.

Demonstrate the steps involved in inserting a video file into a presentation. (refer Suggested Activity also).

Tell the students about the various categories of slide transitions available in MS PowerPoint.

Demonstrate the application of transitions to slides in a presentation.

Introduce animation as the feature that gives a moving effect to text and other objects on the slide.

Show to the students the steps involved in applying custom animation to various objects on a slide.

Tell the students the animation effects applied to different objects on a slide can be reordered.

Share with the students that running a presentation is called Slide Show.

Demonstrate to the students the various steps involved in running a slide show.

Ask the students to solve the exercise Warm Up! given on page number 51.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a theme?

Q. What do you mean by customizing a theme?

Q. Can you change background, colour, fonts, etc. of a theme?

Q. What is Slide Master?

Q. What is SmartArt?

Q. What is an Animation?

Q. What is a Transition?

Q. How to add animation in a slide?

Q. How to add transition in a presentation?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 53, 54 and 55 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 55 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section

on Page 55 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Divide the class into two teams. Ask one team to prepare charts on various types of pollution.

Ask the other team to prepare a PowerPoint presentation on the same topic. Make the students share the benefits enjoyed and limitations faced by each team while working on their project.

Divide the class into two teams. Ask one team to prepare presentation on different planets of the solar system. Use appropriate animation and transition effects.

5. Introduction to Excel 2016

Teaching Objectives

Students will learn about

- Excel 2016
- Features of Excel 2016
- Starting Excel
- Components of Excel 2016 Window
- Changing the Active Cell
- Creating a New Workbook
- Entering Data
- Working with Worksheet
- Saving a Workbook
- Opening a Workbook
- Closing a Workbook
- Selecting Cells
- Entering Date and Time
- Changing Cell Contents

Teaching Plan

Number of periods: 4

While teaching this chapter, tell the students that MS Excel is an application software that helps us to store and analyse data.

Tell the students that to enter data in a cell, simply click on the cell and enter data.

Tell the students the methods of modifying data by cut, copy and paste.

Explain to the students the steps involved in changing row height and column width – both manually and automatically.

Tell the students that Excel allows inserting blank rows and columns at the required place in the worksheet.

Demonstrate to the students how two or more cells can be merged into one and also how a cell can be split up into two or more cells (refer Suggested Activity also).

Explain some worksheet formatting features of Excel like:

- **Word wrap** – displaying multiple lines of text in a cell.
- **Format numbers** – applying various data types to the cells.
- **Cell borders** – boundary around a cell or a series of cells.
- **Cell styles** – Pre-defined cell border, colour and formatting.

- **Cell fills** – adding colours or shades in the cells.

Show to the students the steps involved in applying all of these formatting features on a worksheet.

Explain to the students that worksheet tab can be customized by changing its default name and colour.

Introduce to the students AutoFill feature of Excel as automatically filling a series of data in the worksheet and the steps involved in the same.

Familiarize the students with the various components of MS Excel 2016 window covering:

Title Bar, File Tab, Quick Access Toolbar, Ribbon, Formula Bar, Name Box, Worksheet Window, Worksheet Tab, Worksheet Tab Scrolling Buttons, Status Bar, Row, Column, Row and Column Heading Buttons, Cell, Active Cell, Mouse Pointer, Workbook and Cell Range.

Demonstrate to the students the steps to:

- Create a new workbook
- Enter data in a worksheet
- - Adding a worksheet
- - Renaming a worksheet
- - Removing a worksheet
- Save a workbook

Tell the students that to enter data in a cell, simply click on the cell and enter data.

Tell the students the methods of modifying data by cut, copy and paste.

Explain to the students the steps involved in changing row height and column width – both manually and automatically.

Tell the students that Excel allows inserting blank rows and columns at the required place in the worksheet.

Demonstrate to the students how two or more cells can be merged into one and also how a cell can be split up into two or more cells.

Explain some worksheet formatting features of Excel like:

- **Cell borders** – boundary around a cell or a series of cells
- **Cell styles** – Pre-defined cell border, colour and formatting
- **Cell fills** – adding colours or shades in the cells

Show to the students the steps involved in applying all of these formatting features on a worksheet.

Explain to the students that worksheet tab can be customized by changing its default name and colour.

Introduce to the students AutoFill feature of Excel as automatically filling a series of data in the worksheet and the steps involved in the same.

Ask the students to solve the exercise Warm Up! given on page number 68.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Excel 2016?

Q. What are the features of Excel 2016?

Q. Name any five components of Excel 2016.

Q. Define Formula Bar / Name Box / Row / Column / Cell / Active Cell / Cell Range.

Q. State the situation when Number / Text / Date and Time data type used for.

Q. State the shortcut key to save an Excel worksheet.

Q. What is the difference between Cut and Copy options?

Q. Define merging of cells.

Q. Define splitting of cells.

Q. Name any three number formats available in Excel.

Q. What is meant by border of a cell?

Q. What is the use of AutoFill feature?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 71 and 72 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 72 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 72 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to design their class time-table in Excel 2016.

Ask the students to prepare a table in this format for their family members.

S.No.	Name	Relation with Me	Date of Birth	Age

6. Creating Shapes in Scratch

Teaching Objectives

Students will learn about

- ☞ Pen Block
- ☞ Drawing a Line in Scratch
- ☞ Drawing Polygons in Scratch
- ☞ Drawing a Square in Scratch
- ☞ Drawing a Circle in Scratch

Teaching Plan

Number of periods: 2

Tell the students about pen block and explain its use with using appropriate examples. Also, show the steps involved in creating programs using pen blocks.

Show the steps involved in drawing a line in Scratch.

Tell the steps involved in drawing polygons in Scratch.

Explain the steps involved in drawing a square in Scratch.

Demonstrate the steps involved in drawing a rectangle in Scratch. Also, show the steps involved in drawing a circle in Scratch.

Ask the students to solve the exercise Warm Up given on page number 76 .

Extension

Ask the students some oral questions based on this chapter.

Q. What is a pen block?

Q. How can you draw a line in Scratch?

Q. How can you draw a polygon in Scratch?

Q. How can you draw a rectangle in Scratch?

Q. How can you draw a square in Scratch?

Q. How can you draw a circle in Scratch?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 78 and 79 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 79 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 79 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to draw a triangle and circle together in a program.

7. Conditional Blocks in Scratch

Teaching Objectives

Students will learn about

- Blocks Shapes in Scratch
- Sensing Blocks
- Variables
- Conditional Blocks
- Creating a Game

Teaching Plan

Number of periods: 4

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

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

Show the students the shapes of blocks:

- Hat Blocks
- Stack Blocks
- Boolean Blocks
- Reporter Blocks
- C Blocks
- Cap Blocks

Explain the Sensing block to the students and the steps involve in the use of this block.

Tell the students what are variable using appropriate examples along with-

- Types of variables
- Creating variables

Explain the Conditional Blocks to the students and the steps involved in this in detail.

Demonstrate ho can one create a game in Scratch using appropriate blocks.

Ask the students to solve the exercise Warm Up! given on page number 84.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. Define:

- Hat Blocks
- Stack Blocks
- Boolean Blocks
- Reporter Blocks
- C Blocks
- Cap Blocks

Q. What is a sensing block?

Q. What is a variable?

Q. What are conditional blocks?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 89 and 90 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 91 in the main course book.

Take the students to the computer lab and let them practice the activity given in In the Lab section on Page 91 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to develop the story of Rabbit and Tortoise in Scratch.

8. Computer Virus

Teaching Objectives

Students will learn about

- ☞ What is a Computer Virus?
- ☞ Types of Computer Virus
- ☞ How does a Computer get Infected with Virus?
- ☞ How do you know your PC has a Virus?
- ☞ How to Prevent from a Virus?
- ☞ Antivirus software
- ☞ Firewall

Teaching Plan

Number of periods: 2

While teaching this chapter, tell the students that a computer virus can destroy the programs and files saved in a computer. Introduce computer virus as a program that can infect the system and/or duplicate itself reducing the storage space.

Share examples of some computer viruses with the students. Tell the students about the harms that may be caused by a computer virus. Explain to the students the various methods by which a computer system may get infected with virus.

Make the students aware of the symptoms that tell that a computer system is infected by a computer virus.

Explain in detail to the students the various methods by which prevention can be taken from a computer virus.

Introduce the students to the concept of antivirus as a program developed to detect and remove virus from a computer system.

Share the names of some commonly used antivirus programs. (See Suggested Activity also).

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

Ask the students to solve the exercise Warm Up! given on page number 96.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a computer virus?

Q. State any two harms caused by a computer virus.

Q. State any two methods by which a computer may get infected by Computer Virus.

Q. State any two symptoms that show that a computer system has been infected by a virus.

Q. State any two ways in which the user can prevent from a computer virus.

Q. What is antivirus program?

Q. What is the main purpose of an antivirus program?

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 97, 98 and 99 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 99 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Find Out and In the Lab section on Page 99 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to collect information about any computer virus and narrate it in the class.

9. Internet and E-Mail

Teaching Objectives

Students will learn about

- ☞ Internet
- ☞ Requirements to Connect to Internet
- ☞ Types of Internet Connection
- ☞ Using Web Browser
- ☞ Using URLs
- ☞ E-mail

Teaching Plan

Number of periods: 4

While teaching this chapter, tell the students that the internet is a computer network that connects hosts and end systems throughout the world.

Introduce the concept of World Wide Web (WWW) with reference to basic terms covering web, web servers, posting/uploading, etc.

Explain to the students the process of how the web works.

Introduce web browser as software application designed to find hypertext documents on the web.

Show to the students the steps involved in the process of launching the web browser.

Tell the students about Uniform Resource Locator or URL (unique internet address) and their use while navigating on internet.

Make the students recall E-mail as the process of exchanging messages electronically through communications network by using a computer.

Share with the students the advantages and disadvantages of e-mail.

Explain the components of an e-mail address to the students.

Demonstrate in detail the steps involved in:

- Creating an e-mail account

- Signing in to an e-mail account
- Sending an e-mail (with reference to fields like To, Cc, Bcc and Subject)
- Attaching files to an e-mail
- Reading a received e-mail
- Signing out from the e-mail account (tell them the importance of this step)

Ask the students to solve the exercise Warm Up! given on page number 104.

Extension

Ask the students some oral questions based on this chapter.

Q. What is World Wide Web?

Q. Define web server.

Q. How the web works?

Q. Expand URL?

Q. Define an e-mail.

Evaluation

After explaining the chapter, let the students do the Mind Drill given on Page 110 and 111 in the main course book as Rapid Fire and Evaluation Time. Tell the students to try sections under Activity Time given on Page 112 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Find Out and In the Lab section on Page 112 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create an e-mail account. Tell them to design a birthday invitation card in Adobe Photoshop and send this card as an attachment to ten friends and/or relatives.