LESSON PLAN
Touchpad PLUS Ver 2.0
Class-8

1. Computer Networking

Teaching Objectives

Students will learn about

- ☞ Computer Network
- ☞ Advantages of Computer Network
- ☞ Components Required for a Network
- ☞ Topology
- ☞ Wireless Networking Technology

- ☞ Need for Computer Network
- ☞ Network Terminology
- ☞ Types of Network
- ☞ Network Architecture
- ☞ Protocol

Teaching Plan   **Number of Periods: 4**

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 7 of the main course book.

While teaching this chapter, tell the students that the process of connecting computers and peripheral devices with each other to exchange data is called computer networking.

Tell the students about the meaning and basics of computer network.

Share with the students the need for computer network – for resource sharing and for communication.

Discuss with the students the advantages of a computer network.

Introduce network terms like Server (host computer) and Client (dependent on server).

Explain the different types of servers to the students covering dedicated server, print server, database server, network server and web server.

Tell the students about the components required for a network covering NIC, hub/switch, router, modem and networking cable.

Share with the students that on the basis of geographical area covered, the networks can be classified into LAN (Local Area Network), MAN (Metropolitan Area Network), WAN (Wide Area Network), PAN (Personal Area Network) and CAN (Campus Area Network).

Introduce Topology as geometric arrangement of computers or nodes in a network.

Explain the difference between different types of topologies covering bus topology, ring topology, star topology, tree topology and mesh topology (Refer Suggested Activity also).

Tell the students that the network architecture defines the overall design of the computer network.

Share with the students the two types of network architectures as Peer-to-Peer network and Client-Server network.

Share with the students about the wireless networking technologies detailing about Wi-Fi and Bluetooth.

Introduce Protocol as a set of rules that govern the communication between the computers on a network.

Discuss briefly about the different types of protocols explaining about HTTP, HTTPS, FTP, TC/IP, POP3, IMAP and SMTP.

Ask the student to solve the exercise Let's Catch Up given on page number 11, 16 and 18.

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 computer network.

Q.   What is the need for a computer network?

Q.   What are the advantages of a computer network?

Q.   Define server / client.

Q.   What are the different types of computer servers?

Q.   What are the components required for a network?

Q.   Define LAN / MAN / WAN / PAN / CAN.

Q.   Define Topology.

Q.   Name different types of topologies.

Q.   What is meant by protocol?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 19 and 20 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, Let's Explore and Let's Get Better given on Page 20 and 21 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 21 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 models of different types of topologies using marbles and used wire pieces / straws.

2. Introduction to Adobe Photoshop CC

Teaching Objectives

Students will learn about

☞ Features of Adobe Photoshop CC

☞ Creating a New Document

☞ Opening an Image in Photoshop

☞ Tools in Photoshop

☞ Cropping Tools

☞ Inserting Text

☞ Saving a File in Photoshop

☞ Opening Adobe Photoshop CC 2018

☞ Adobe Photoshop CC 2018 Interface

☞ Placing an Image in an Existing Document

☞ Move and Selection Tools

☞ Painting Tools

☞ Transform Tool

☞ Closing a File and Exiting Photoshop

Teaching Plan   Number of periods: 5

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 22 of the main course book.

While teaching this chapter, tell the students that Photoshop is a designing software developed in 1988.

Introduce student with Adobe Photoshop CC using examples.

Explain the features of Photoshop to the students in detail.

Demonstrate to the students the steps involved in opening Photoshop CC 2018.

Demonstrate to the students the steps involved in creating a new document in Photoshop.

Explain all the components of Photoshop interface with proper labeled pictures.

Tell the students the steps to open an image in Photoshop.

Demonstrate to the students the steps involved in placing an image in an existing document in Photoshop.

Explain to the students the following tools of Photoshop and explain them in details with steps:

a. Move and Selection tools
   - Rounded Marquee tool
   - Polygonal Lasso tool
   - Magic Wand tool
   - Elliptical Marquee tool
   - Magnetic Lasso tool
   - Lasso tool
   - Quick Selection tool

b. Cropping tools
   - Crop tool
   - Slice tool and Slice Select tool
   - Perspective Crop tool

c. Painting tools
   - Brush tool
   - Mixer Brush tool
   - Paint Bucket tool
   - Pencil tool
   - History Brush tool
   - 3D Material Drop tool
   - Color Replacement tool
   - Gradient tool

d.   Inserting Text
  • Using Horizontal Type Tool   • Using Horizontal Type Mask Tool
e.   Transform Tool

Tell the students the steps to save a file and closing a file in Photoshop along with exiting Photoshop.

Ask the student to solve the exercise Let's Catch Up given on page number 31.

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 role of Adobe Photoshop?

Q.   What are the features of Photoshop?

Q.   What is the use of Move tool?

Q.   What is the use of Selection tool?

Q.   What is the use of Cropping tool?

Q.   What is the use of Inserting text tool?

Q.   What is the use of transform tool?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 42 and 43 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 43 and 44 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 44 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 crop two images and make them one using proper Photoshop tools taught in this chapter.

3.   More on Photoshop CC

Teaching Objectives

Students will learn about

☞   Layers in Photoshop   ☞   Painting Tools in Photoshop
☞   Retouching Tools   ☞   Drawing Tools
☞   Shape Tools   ☞   Navigation Tools
☞   Image Menu   ☞   Layer as a Smart Object

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 45 of the main course book.

While teaching this chapter, revise the features and tools of Photoshop CC for the students taught in the earlier chapter.

Demonstrate to the students the Layers in Photoshop CC 2018 and explain the step involved in creating a new layer.

Explain all the components of Photoshop interface with proper labeled pictures.

Tell the students the steps to open an image in Photoshop.

Demonstrate to the students the steps involved in placing an image in an existing document in Photoshop.

Explain to the students the following tools of Photoshop and explain them in details with steps:

a. Painting tools
- Eye Dropper tool
- 3D Material Eyedropper tool
- Color Sample tool
- Ruler tool
- Note tool
- Eraser tool
- Background Eraser tool
- Magic Eraser tool

b. Retouching tools
- Healing Brush tool
- Patch tool
- Content Aware Move tool
- Red Eye tool
- Clone Stamp tool
- Pattern Stamp tool
- Blur, Sharpen and Smudge tool
- Dodge, Burn and Sponge tool

c. Drawing tools
- Pen tool

d. Shape tools
- Custom Shapes

e. Navigation Tools
- Hand tool
- Rotate View tool
- Zoom tool

Tell the students the image menu options along with the description of each.

Teach the students about Layers as an object with steps involved in it.

Ask the student to solve the exercise Let's Catch Up given on page number 57.

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 use of Painting tool?

Q. What is the use of Retouching tool?

Q. What is the use of Navigation tool?

Q.   What is the use of Drawing tool?

Q.   What is the use of Shapes tool?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 60 and 61 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 61 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 61 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 download and edit an image and make them one using proper tools.

4.   Lists and Tables in HTML

Teaching Objectives

Students will learn about

☞   Creating Lists   ☞   Creating Tables

Teaching Plan   **Number of periods: 2**

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 63 of the main course book.

While teaching this chapter, tell the students that HTML tags are used to create a web page.

Introduce list as collection of related items.

Tell the students that there are three types of lists – Ordered List (Numbered List), Unordered List (Bulleted List) and Definition List (Description List).

Explain the use of <OL> tag to create ordered lists, <UL> tag to create unordered lists and <DL> tag to create definition lists. (See Suggested Activity 1 also).

Explain the use of <TABLE> tag and its child tags covering <TR>, <TD>, <TH> and <Caption>.

Explain the use of different attributes of <TABLE> tag covering BORDER, BORDERCOLOR, FRAMES, BGCOLOR, BACKGROUND, HEIGHT, WIDTH, CELLSPACING and CELLPADDING.

Discuss the use of different attributes of <TD> tag explaining about ALIGN, BGCOLOR, WIDTH, ROWSPAN, COLSPAN and VALIGN attributes.

Tell the students that all the attributes except ROWSPAN and COLSPAN are taken up by <TR> tag also.

Demonstrate the code to create a table and its data in HTML. (See Suggested Activity 2 also).

Ask the student to solve the exercise Let's Catch Up given on page number 67 and 73.

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 List / Table.

Q. How many types of Lists can be created in HTML?

Q. Name the different types of Lists that can be created in HTML.

Q. What is an Ordered / Unordered / Definition List?

Q. Name the attributes of <OL> tag.

Q. Name the tags used to create Definition List.

Q. Name the tags that can used to create different kinds of tables.

Q. What are the attributes of <TABLE> / <TD> tag?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 74 and 75 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 75 and 76 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 76 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:

* List of favourite games of 10 friends.
* Table of car names and their models.

5. Images, Links and Frames in HTML

Teaching Objectives

Students will learn about

☞ Inserting Images

☞ Linking Web Pages

☞ Creating Marquee

☞ Frames

Teaching Plan   Number of periods: 4

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 77 of the main course book.

While teaching this chapter, tell the students that HTML allows inserting images and frames on web pages as well as interlinking them.

Tell the students that HTML supports JPEG, GIF and PNG image formats.

Tell the students that <IMG> tag is used to insert images and it takes the attributes as SRC, WIDTH, HEIGHT, ALIGN, BORDER and ALT.

Demonstrate to the students the use of <IMG> tag and its attributes.

Introduce Marquee as the moving objects on a web page to get special attention of the users.

Explain the use of <MARQUEE> tag and its attributes as BEHAVIOUR, DIRECTION and SCROLLAMOUNT.

Make the students understand that a hyperlink is an underlined text or an image which when clicked takes the user to some other location.

Share with the students that <A> is used to create links and the attributes that this tag can take are – LINK, ALINK and VLINK.

Demonstrate the use of <A> tag and its attributes to hyperlink web pages (See Suggested Activity also).

Introduce Frames as a feature to display more than one web page on a single screen of the web browser.

Explain the use of <FRAMESET> tag and <FRAME> tag to create and define frames on a web page.

Tell the students that the <FRAME> tag can take FRAMEBORDER, NORESIZE and SRC as attributes.

Demonstrate the use of <FRAMESET> and <FRAME> tags to create frames on a web page.

Ask the student to solve the exercise Let's Catch Up given on page number 89.

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.   Which tag is used to insert images on a web page?

Q.   State the use of SRC / WIDTH / ALIGN /ALT attribute of IMG tag.

Q.   Which image formats are supported by HTML?

Q.   What is the use of MARQUEE tag?

Q.   Which tag is used to link web pages?

Q.   Name the attributes that can be taken by FRAME tag.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 90 and 91 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 91 and 92 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 92 and 93 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-shopping web site listing categories of items on home page and details of items on separate category pages.

6. Python—Loop and Functions

Teaching Objectives

Students will learn about

☞ The FOR Statement

☞ The WHILE Statement

☞ Jump Statements

☞ Functions

Teaching Plan

Number of periods: 4

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 97 of the main course book.

While teaching this chapter revise Python for the students and repeat the features of Python from the earlier class.

While teaching this chapter, tell the students about Python has some looping statements.

Demonstrate to the students the steps involved in using these statements using programs and syntax are:

a. FOR statement

   • using the range() statement

b. WHILE statement

   • infinite loop

   • while loop using else statement

c. JUMP statement

   • break statement

   • continue statement

Demonstrate to the students the steps involved in using the FUNCTIONS using programs and syntax.

Ask the student to solve the exercise Let's Catch Up given on page number 101.

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 are looping statement?

Q. What is the function of FOR statement?

Q. What is the function of WHILE statement?

Q. What is the function of JUMP statement?

Q. What is a FUNCTION?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 105 and 106 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 106 and 107 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 107 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 list of series where you can apply the FOR and JUMP statements.

7. Computer Safety and Security

Teaching Objectives

Students will learn about

☞ How to Keep your Computer Physically Fit? ☞ Protecting your Computer from Illegal Access

☞ How to Backup your Important Files? ☞ Other Maintenance Techniques

☞ Malware ☞ Antivirus

☞ Firewall

Teaching Plan
Number of periods: 4

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 108 of the main course book.

While teaching this chapter, tell the students that computer safety refers to the protection of computer-based resources against unauthorized use or physical damage.

Tell the students the method of physically cleaning computer parts like keyboard, mouse and monitor.

Share with the students the method to protect the computer from illegal access by reference to terms like authentication (verifying user's identity) and covering:

• Password protection

• Biometric authentication including face recognition, iris biometrics, retina biometrics and voice recognition

• Encryption (converting data into cypher text)

Explain the need, importance and process of backing up important files using external hard disk drives and online backup services.

Share with the students some information about some other maintenance techniques like deleting files, defragmenting hard disk drive and disk cleanup.

Introduce malware as programs designed to damage or carry out unwanted actions on a computer system.

Explain to the students information about different types of malware like virus, worms, Trojan horses, spyware, zombie, ransomware, rootkits and backdoors.

Explain the importance of antivirus and firewall in maintain computer safety and security.

Ask the student to solve the exercise Let's Catch Up given on page number 110 and 115.

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 authentication.

Q.   Where is elastic graph matching technique used?

Q.   What is the difference between encryption and decryption?

Q.   What is malware?

Q.   Define virus / worm / rootkit / backdoor / ransomware.

Q.   What is an anti-virus?

Q.   Name some commonly used anti-virus software.

Evaluation

After explaining the chapter, let the students do the exercises given on Page 116 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, Let's Explore and Let's Get Better given on Page 117 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 117 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 detailed project on any anti-virus software on an A3 sheet.

8.   Google Apps

Teaching Objectives

Students will learn about

☞   Google   ☞   Apps of Google

Teaching Plan   **Number of periods: 2**

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 119 of the main course book.

While teaching this chapter, brief the students about Google and mobile apps.

Introduce Google to the students along with the history.

Explain the Google Apps to the students in detail like Gmail, Google Drive, Google Maps, Google Docs, Google Sheets, Google Slides and YouTube.

Explain the following components of Google Drive to the students along with the steps involved in:

- What can you store in Google Drive?
- How does it work?
- How much can you store in Google Drive?
- Features of Google Drive

Demonstrate the features of Google Maps to the students along with the steps involved in it.

Demonstrate the opening/ importing an existing word document for editing in Google Docs to the students along with the steps involved in it.

Explain the following components of Google Sheets to the students along with the steps involved in:

- Features of Google Sheets
- Sharing and Protecting Data in Google Sheets
- Protecting Data

- Creating and Saving a New Google Sheet
- Sharing a File

Explain the following components of Google Slides to the students along with the steps involved in:

- Features of Google Slides
- Creating a New Presentation

Explain the following components of YouTube to the students along with the steps involved in:

- Features of YouTube
- Uploading a Video on YouTube

- How to Create YouTube Account

Ask the student to solve the exercise Let's Catch Up given on page number 123 and 131.

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 are Google Apps ?

Q.   What is Gmail?

Q.   What is Google Drive?

Q.   What is Google Maps?

Q.   What is Google Docs?

Q.   What is Google Sheets?

Q.   What is Google Slides?

Q.   What is YouTube?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 134 and 135 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, Let's Explore and Let's Get Better given on Page 135 and 136 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 136 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 a document in Google Docs and a presentation in Google Slides on 'Environment Day'.

9. App Development

Teaching Objectives

Students will learn about

☞ What is an App?

☞ Types of Mobile Apps

☞ Downloading and Installing the App

☞ Defining the Android and iOS

☞ Categories of Apps

☞ Developing an App

Teaching Plan

Number of periods: 2

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 137 of the main course book.

While teaching this chapter, brief the students about smartphones and technology.

Tell the students that an App is a software program primarily developed for hand-held smart devices such as mobile and tablet.

Explain to the students the difference between the Android and iOS in detail.

Demonstrate the types of Mobile Apps to the students with example, that are:

- Native Apps
- Web Apps
- Hybrid Apps

Explain the following categories of Apps to the students along with the examples:

- Gaming Apps
- Productivity Apps
- Entertainment Apps
- Utility Apps
- Educational Apps
- Social Networking Apps
- Communication Apps
- E-Commerce Apps

Explain to the students the steps involved in downloading and installing the Apps.

Explain to the students the steps involved in developing an App.

Ask the student to solve the exercise Let's Catch Up given on page number 139.

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 an App ?

Q. Define the following:

- Gaming Apps
- Productivity Apps
- Entertainment Apps
- Utility Apps
- Educational Apps
- Social Networking Apps
- Communication Apps
- E-Commerce Apps

Evaluation

After explaining the chapter, let the students do the exercises given on Page 147 and 148 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve, Let's Explore and Let's Get Better given on Page 148 and 149 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 149 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 an App for reciting tables with your help.

10. Latest Technological Development

Teaching Objectives

Students will learn about

☞ Artificial Intelligence

☞ Internet of Things

☞ RPA (Robotic Process Automation)

☞ Augmented Reality and Virtual Reality

☞ 3D Printing

Teaching Plan   Number of periods: 2

Before starting the chapter, ask the students to solve the question in Let's Plug In given on Page 150 of the main course book.

Demonstrate Artificial Intelligence to the students along with the main areas of AI:

- Expert system
- Pattern recognition
- Natural Language processing
- Robotics
- Intelligent agents
- Intelligent Apps (I-Apps)

Explain the following to the students along with the examples in detail:

- Augmented Reality
- 3D Printing
- Virtual Reality
- RPA (Robotics Process Automation)
- Internet of Things (IOT)

Ask the student to solve the exercise Let's Catch Up given on page number 151.

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 an Artificial Intelligence?

Q.   What is an Augmented Reality?

Q.   What is an Virtual Reality?

Q.   What is an Internet of Things?

Q.   What is an 3D Printing?

Q.   What is an RPA?

Evaluation

After explaining the chapter, let the students do the exercises given on Page 158 and 159 in the main course book as Test Your Skills. Tell the students to try sections under Fun Zone– Let's Solve and Let's Explore given on Page 159 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Tech Practice section on Page 159 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 try any digital assistant like Alexa or Siri and ask "What is Virtual Reality?".