Class 8

LESSON PLAN

Touchpad MODULAR Ver 2.0

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

Number of Periods	
Theory	Practical
2	1

Teaching Plan

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 terminologies like Server (host computer) and Client (dependent on server) to the students.

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 that Topology is a geometric arrangement of computers or nodes in a network to the students.

Explain the five 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 such 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.

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 and client.

Q. What are the different types of computer servers?

Q. What are the components required for a network?

Q. Define the terms:

- LAN
- MAN
- WAN
- PAN
- CAN

Q. Define Topology.

Q. Explain different types of topologies.

Q. What do you meant by protocol?

Encourage the students to walk through the chapter and ask them to explain any one topic from the chapter.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 13 and 14 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in **In the Lab** section on Page 14 in the main course book. This will enhance the abilities 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. Windows–Photos and Video Editor

Teaching Objectives

Students will learn about

- ☞ Photo Editing
- ☞ Video Editing

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students about new apps like photos in Windows 10.

Introduce the students to Photo Editing.

Teach the students how to start Photos App and to open a photo for editing.

Demonstrate to the students the method of cropping, rotating and flipping photos in Photos App.

Demonstrate to the students how to apply filters to a photo.

Tell them that In Photos App, we can also adjust brightness and contrast by using the Adjustments feature.

Demonstrate the steps to open a video file for editing.

Explain to the students the process of adding title card with text to a video.

Further tell them that how to trim the videos using the trim button.

Also demonstrate the steps to add 3D effects in a video.

Activity can be created on the photo editing and take two printouts before and after editing and display them in front of the class to demonstrate the difference between original photo and edited photo.

Tell them the various steps involved in editing a photo and video.

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 editing?

Q. What is the use of editing?

Q. How is photo different from a video?

Q. Name some photo editing apps.

Q. What is the difference between brightness and contrast?

Q. What do you mean by video editing?

Q. What is cropping?

Q. What is rotating?

Q. What is flipping?

Q. What is a filter?

Q. What is trimming?

Q. What are 3D effects?

Encourage the students to walk through the chapter and ask them to explain any one topic from the chapter.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 22 and 23 of the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in **In the Lab** section on Page 23 in the main course book. This will enhance the abilities of the students and serve as a subject enrichment activity.

Suggested Activity

Ask the students to prepare a word document on major differences between photo and video editing and take print out on an A4 sheet of paper.

3. Introduction to GIMP

Teaching Objectives

Students will learn about

- Features of GIMP
- Components of GIMP Window
- Opening an Image for Editing
- Starting GIMP
- Creating a New File
- Saving a File

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that GIMP is a free open-source graphics software used for image creation and editing.

Explain the features of GIMP to the students.

Demonstrate to the students the steps to start GIMP.

Familiarize the students with the components of GIMP covering Menu Bar, Toolbox, Foreground/ Background colors, Tool options, Image window, Ruler, Layers Palette and Brushes/Patterns/Fonts tab.

Demonstrate to the students how to create a new file in GIMP.

Show to the students the steps involved in opening an image for editing.

Tell the students the process to:

- Save a file.

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

Ask the students to read the **Clickipedia** given on page 27.

Extension

Ask the students some oral questions based on this chapter.

Q. What is GIMP?

Q. Name the various components of GIMP Window..

Q. State the features of GIMP.

Q. What is a template?

Q. Which button is used to open a file?

Q. What extension does the GIMP add to a file when we save it?

Encourage the students to walk through the chapter and ask them to explain any one topic from the chapter.

Also, ask them to solve Worksheet 1 given on page 24.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 28 and 29 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in **In the Lab** section on Page 29 in the main course book. This will enhance the abilities of the students and serve as a subject enrichment activity.

Suggested Activity

Ask the students to draw a similar drawing in GIMP using various tools from the toolbar.

4. Using Tools in GIMP

Teaching Objectives

Students will learn about

- ☞ Selection Tools
- ☞ Paintbrush Tool
- ☞ Text Tool
- ☞ Retouching Tools
- ☞ Crop Tool
- ☞ Zoom Tool
- ☞ Gradient Tool
- ☞ Correction Tools

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that GIMP is used for creating and editing images in order to make them look attractive.

Familiarize the students with the components of GIMP covering Menu Bar, Toolbar, Foreground/ Background Color, Tool options, Image window, Ruler, Layer Palette and Brushes/Patterns/Fonts tab.

Introduce retouching tools as the tools used to add or remove features to an image.

Demonstrate the use of Retouching Tools like:

- Spot Healing Brush Tool (used to repair dark spots, scratches, etc.)
- Clone Stamp Tool (used to duplicate parts of an image)
- Pattern Stamp Tool (used to give attractive textures and backgrounds to an image)

Demonstrate the use of Correction Tools like:

- Blur Tool (used to blur parts of an image)
- Smudge Tool (used to show image as wet paint on the image has been spread by finger)
- Dodge Tool (used to improve quality of an image)

Extension

Ask the students some oral questions based on this chapter.

Q. What is GIMP used for?
Q. What are Retouching Tools?
Q. Name some important retouching tools in GIMP.
Q. What is the use of Correction tools in GIMP?
Q. Name the important correction tools of GIMP.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 37 and 38 in the main course book as **Exercise**. Tell the students to try different activities under Mind Boggler and **Hands-On** given on Pages 39 in the main course book.

Take the students to the computer lab and let them practice the activity given **In The Lab** Session section on Page 39 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 arrange a scanned copy of their passport size photo and apply retouching and correction tools to beautify the image.

5. Advanced Filters of GIMP

Teaching Objectives

Students will learn about

- ☞ Layers
- ☞ Merging Two Images
- ☞ Changing the On-screen Size of an Image
- ☞ Working with Layers
- ☞ Filters
- ☞ Changing the Print Size of an Image

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that GIMP is used for editing images for making them look interesting.

Introduce Layers as transparent sheets containing objects which are stacked on top of each other so that individual properties of an object can be edited without affecting other objects.

Explain how to create a new layer and delete an existing layer from an image.

Demonstrate how to merge two images to the students.

Introduce Filters as tools which are used to modify an image in a variety of ways. Also, show them how to apply filters to images.

Show the steps involved in:

- Changing the on-screen size of image
- Changing the print size of image

Extension

Ask the students some oral questions based on this chapter.

Q. What are layers?

Q. What is the use of Layers in GIMP?

Q. What are filters?

Q. What is the use of filters in GIMP?

Q. How can you change the on-screen size of image?

Q. How can you change the print of image in GIMP?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 47 and 48 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given **In The Lab** Session section on Page 48 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 labeled diagram of the GIMP Tools panel in your computer practical file or notebook.

6. Introduction to TUPI 2D

Teaching Objectives

Students will learn about

- ☞ Features of Tupi 2D
- ☞ Components of the Tupi 2D Window
- ☞ Saving a Project in Tupi 2D
- ☞ Exiting Tupi 2D
- ☞ Library
- ☞ Starting Tupi 2D Software
- ☞ Creating a New Tupi 2D Project
- ☞ Opening a Tupi 2D Project
- ☞ Tools of Tupi 2D

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Tell the students about Tupi 2D and features of it.

Show the steps to install TubiTube Desk and start the application.

Explain the components of Tupi 2D window: Menu bar, Toolbox, Toolbar, Workspace, Paint Area Action Toolbar, Modules Tab, Left side bar and right side bar along with the functions.

Show the students how to create a document in Tupi 2D with labelled steps.

Demonstrate to the students the steps involved to create shapes in Tupi 2D.

Show the students the steps involved in:

- Saving a program
- Opening an existing project
- Exiting Tupi 2D

While teaching this chapter, tell the students that the various tools present in the Tools panel are quite helpful in creating drawings in Tupi 2D.

Demonstrate the use of some important drawing tools along with some of their important properties to be defined in Tupi 2D covering:

- Pencil Tool – used to draw freehand lines and curves. The properties to be defined are Stroke Color, Stroke Height, Stroke Style and Cap.
- Ink Tool – used to draw in different colors. The properties to be defined are Stroke Color, Stroke Height, Stroke Style and Cap.
- PolyLine Tool – used to draw closed shapes like triangles and those having five or more sides. The properties to be defined are Style and Number of Sides.
- Brushes Tool – used to draw closed rectangles and squares. The properties to be defined are Stroke Color, Fill Color, Stroke Height and Stroke Style.
- Object Selection Tool – used to select parts or whole objects from the stage.

- Node Selection Tool – helps to reorder the nodes which are created while drawing the object.
- Fill Tool – used to fill colour in closed shapes. The properties to be defined are Fill Color.

Explain the use of the Library in Tupi 2D.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Tupi 2D?
Q. How to create a document in Tupi 2D?
Q. How to save a project in Tupi 2D?
Q. How to open an existing project in Tupi 2D?
Q. What is the use of Tools panel?
Q. What is the use of Pencil / Fill / Object Selection tools?
Q. What are the different properties that need to be defined for PolyLine / Brushes / Ink tools?
Q. Which key is pressed to draw a square or a circle?
Q. What is the use of Library?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 61 and 62 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given **In The Lab** Session section on Page 62 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 any shape in Tupi 2D using the tools taught in this chapter.

7. Animations in Tupi 2D

Teaching Objectives

Students will learn about

- ☞ Exposure Sheet
- ☞ Frames
- ☞ Layers
- ☞ Tween

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that Tupi 2D is an authoring tool to create games, applications, simple animations, etc.

Tell the students about the exposure sheet and how to use it.

Tell the students about Layers and their importance in Flash.

Introduce the concept of frames in Tupi 2D and its purpose.

Make the students understand the meaning of and difference between frames and keyframes.

Explain the concept of animation using tweens.

Show the steps to create various types of tweens covering all types of Tween.

Tell the students that animation can also be done in Flash through Frame by Frame technique.

Tell the students about tweens and different types of tweens –

- Motion Tween
- Rotation Tween
- Scale Tween
- Shear Tween
- Opacity Tween
- Coloring Tween

Extension

Ask the students some oral questions based on this chapter.

Q. What is Tupi 2D used for?

Q. What do you understand by Layers?

Q. How are layers useful?

Q. What is the difference between a frame and a keyframe?

Q. Define Tween.

Q. What is Motion Guide Tweening?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 69 and 70 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given **In The Lab** Session section on Page 70 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 animation where two cars are coming on a road from opposite directions and crash in the center.

8. 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 App
- Developing an App

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Plug-In given on Page 68 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.

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 Pages 83 and 84 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given In The Lab section on Page 84 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.

9. Loops in Python

Teaching Objectives

Students will learn about

- ☞ The for Statement
- ☞ The Infinite Loops
- ☞ Some More Programs
- ☞ The while Statement
- ☞ Jump Statements

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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.

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 Pages 92 and 93 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given **In The Lab** section on Page 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 make a list of series where you can apply the FOR and JUMP statements.