TOUCHPAD

Play Ver. 2.1

7

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Periods / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										

Development Milestones in a Child

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

Age
5 - 8 Years

Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/ Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

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

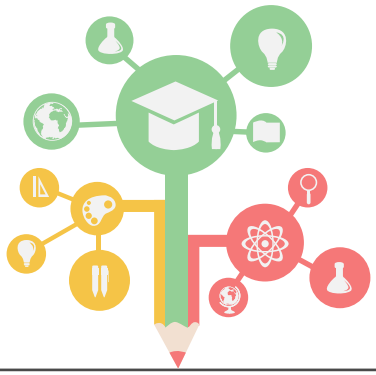
Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/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

Age 11 - 20 Years	
Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/ Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

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

"Family is the most important thing in the world."

Teaching Pedagogies



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

Lesson Plans

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

A lesson plan addresses and integrates three key components:

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

A lesson plan provides an outline of the teaching goals:

Before the class

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

During the class

Present the lesson plan.

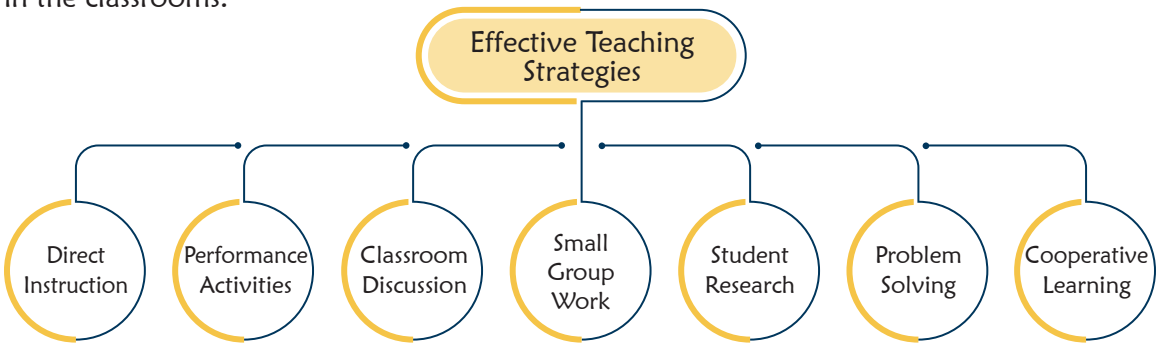
After the class

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

> "Knowing yourself is the beginning of all wisdom."

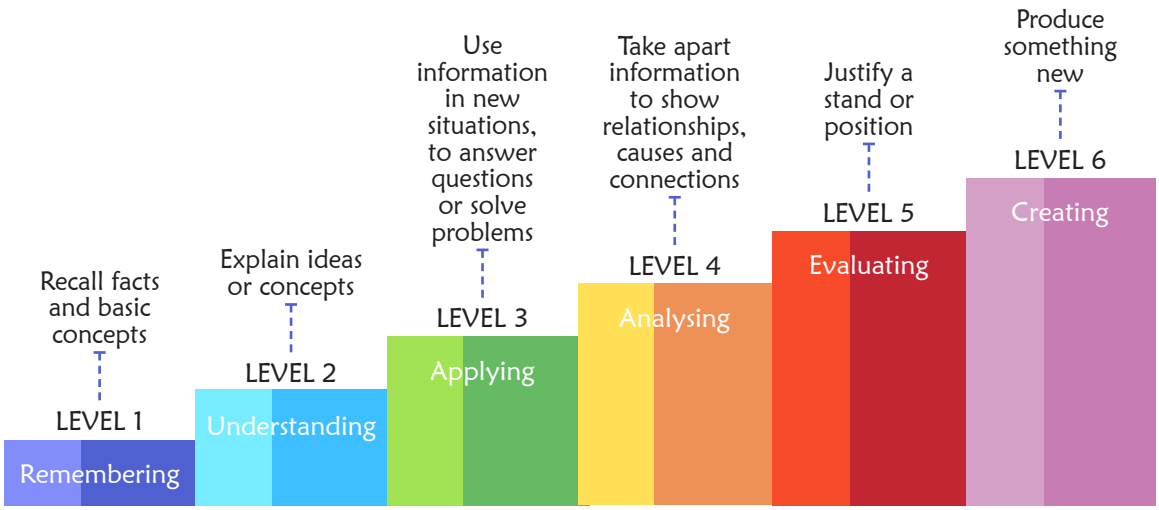
Teaching Strategies

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



Bloom's Taxonomy

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



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

> "If you have no confidence in self, you are twice defeated in the race of life."

CLASS 7

LESSON PLAN

1 Advanced Features of Windows 10

Teaching Objectives

Students will learn about:

- Understanding File Explorer
- Searching of Files or Folders
- Different Views of Files and Folders
- Control Panel

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, let the students know that File Explorer is a file manager of Windows operating system.

Make the students aware of the steps of opening the File Explorer.

Explain to the students the different views of files and folders, like:

Extra Large Icons View

Large Icons View

Medium Icons View

Small Icons View

List View

Details view

Tiles View

Content View

Make the students aware of searching files or folders using File explorer or Wildcard Characters like astrisk or question mark.

Explain to the students that the Control Panel is used to control and modify many features of Windows 10 on the computer.

Let the students know about the important computer settings present in Control panel and their uses.

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 File Explorer?

Q. Name the different views of files and folders in Windows 10.

Q. Define Details View in Windows 10.

Q. Define the Tiles View in Windows 10.

Q. Define the Content View in Windows 10.

Q. How can we search for a file using Wildcard characters?

Q. How can we search for a file using question mark?

Q. What is Control Panel?

Q. Name some important computer settings present in Control Panel.

Q. What is a font?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 13 to 15 of the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity **IN THE LAB** given on page 15 of the main course book. It will enhance the ability of the students and will serve as an Information Literacy activity.

Suggested Activity

Ask the students to collect information about some more features of Windows 10 other than those discussed in the chapter.

2 Charts in Excel

Teaching Objectives

Students will learn about:

- Components of a Chart
- Creating a Chart
- Types of Charts in Excel 2016
- Formatting a Chart

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that a chart is an effective way to display data in pictorial form.

Show the different components of an Excel chart.

Familiarise the students with the different types of chart options available.

Explain each chart type to the students with examples:

- Line chart
- Column Chart
- Pie chart
- Bar chart
- Area chart
- Scatter chart

Demonstrate to the students the steps of formatting a chart.

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 charts in Excel.

Q. What are gridlines in a chart?

Q. What is a legend?

Q. Name the types of charts present in Excel 2016.

Q. Define a pie chart.

Q. What is an area chart?

Q. Define scatter chart.

Q. In Excel, can we change the type of an existing chart?

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 practise the activity **IN THE LAB** given on page 24 of the main course book. It will enhance the ability of the students and will serve as a Productivity & Accountability and Creativity activity.

Suggested Activity

From the previous marksheets of Grade 1 to 6, collect data about your attendance in various Grades. Plot a line chart in Excel from the data.

3 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.

Let the students know that GIMP provides various selection tools, like:

Rectangle Select Tool

Ellipse Select Tool

Free Select Tool

Fuzzy Select Tool

Make the students aware of the Crop tool in GIMP which is used to remove unwanted portion from an image.

Explain to the students the Paintbrush tool in GIMP the steps of of using Opacity option.

Let the students know that Zoom tool in GIMP is used to magnify a desired part of an image.

Make the students aware of the Text tool in GIMP.

Explain to the students that Gradient tool is used to show a blending effect between two or more colours in the workspace.

Demonstrate the use of Retouching tools like:

- Healing Tool (used to repair dark spots, scratches, etc.)
- Clone Tool (used to duplicate parts of an image)

Demonstrate the use of Correction tools like:

- Blur/Sharpen 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/Burn Tool (used to improve quality of an image)

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 GIMP used for?

Q. Name some selection tools provided by GIMP.

Q. What is Crop tool?

Q. Define Paintbrush tool in GIMP.

Q. What is Opacity option used for?

Q. Define Zoom tool.

Q. what is Text tool?

Q. Define Gradient tool.

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 course book exercises given on pages 36 to 38 of the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity **Hands-On** and **IN THE LAB** given on page 38 of the main course book. It will enhance the ability of the students and will serve as a Initiative, Leadership & Responsibility, Productivity & Accountability and Creativity 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.

4 Advanced Features of GIMP

Teaching Objectives

Students will learn about:

- Layers
- Merging Two Images
- Changing the On-Screen Size of Image
- Changing the Print Size of Image
- Working with Layers
- Filters

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 an image
- Changing the print size of an image

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 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 48 and 49 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **Hands-On** and **IN THE LAB** section on Page 50 in the main course book. This will enhance the ability of the students and serve as a Communication, Social Interaction and Creativity activity.

Suggested Activity

Ask the students to draw a labeled diagram of the GIMP Tools panel in your computer practical file or notebook.

5 Safeguarding Your Computer

Teaching Objectives

Students will learn about:

- Computer Malware
- How Does a Computer Get Infected?
- How to Protect Your Computer
- Firewall
- Harms Caused by Computer Malwares
- Symptoms of an Infected Computer
- Antivirus

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Let the students know that a computer also falls sick as harmful files and applications damage it.

Explain that a computer malware is a software made to cause harm to your system.

Make the students aware of diffrent types of malware like virus, worm, trojan horse, spyware, adware, etc.

Let them know about the most dangerous malwares known such as Wabbit virus, ILOVEYOU virus, Code Red worm, Mydoom worm, Storm worm, Zeus, Emotet, Pegasus, etc .

Make them aware of the various harms caused by computer malware.

Let the students know about the symptoms of an infected computer.

Make the understand how one can protect one's computer.

Finally, let them know that an antivirus is a set of programs that identify and remove malware. Some of the well-known antivirus programs are Norton, Quick heal, AVG, McAfee, Symantec, Kaspersky, etc.

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. Can computer also fall sick?

Q. What is a computer malware?

Q. What is trojan horse?

Q. Name some most dangerous malwares known.

Q. What are the harms caused by computer system?

Q. Name a few sources through which a computer gets infected.

Q. What are the symptoms of an infected computer?

Q. How can you protect your computer?

Q. What is an antivirus?

Q. Name some well-known antivirus programs.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 55 and 56 in the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity given in the **IN THE LAB** section on page 56 in the main course book. This will enhance the ability of the students and serve as Creativity and Technology Literacy activity.

Suggested Activity

Ask the students to find more about the computer malware and popular antivirus.

6 Google Apps

Teaching Objectives

Students will learn about:

- Google
- Apps of Google

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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 much can you store in Google Drive?
- How does it work?
- 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
- Creating and Saving a New Google Sheet
- Sharing and Protecting Data in Google Sheets
- Sharing a File
- Protecting Data

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
- Using YouTube
- Uploading a Video on YouTube

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 Pages 76 to 78 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **IN THE LAB** section on Page 79 in the main course book. This will enhance the ability of the students and serve as Initiative and Social Interaction activity.

Suggested Activity

Ask the students to create a document in Google Docs and a presentation in Google Slides on 'Environment Day'.

7 More on HTML5

Teaching Objectives

Students will learn about:

- HTML
- Text Properties
- Font Properties
- HTML Tags and Attributes
- Background Properties
- Margin Properties

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students about HTML.

Introduce HTML to the students using examples.

Explain to the students the HTML tags and attributes which are:

- <HTML> tag
- <HEAD> tag
- <Title> tag
- <BODY> tag
- <Hn> tag
- <P> tag
-
 tag
- <HR> tag
- <SUP> tag
- <SUB> tag

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

Introduce the students with the text Properties and show the how to use these:

Also show them a code to use all these properties.

Demonstrate the students with the background properties and show them how to use these:

Also show them a code to use all these properties.

Tell the students about how to change the Font properties with the help of a program.

Demonstrate the students with the margin properties and show them how to use them with the help of a program.

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 HTML?

Q. What is the function of:

- <HTML> tag
- <HEAD> tag
- <Title> tag
- <BODY> tag
- <Hn> tag
- <P> tag
-
 tag
- <HR> tag
- <SUP> tag
- <SUB> tag

Q. Define following text properties:

a. color
b. text-align
c. text-indent
d. text-decoration
e. text-transform

Q. Define the following background properties:

a. background-color
b. background-image
c. background-repeat

Q. Define the following font properties:

a. font-family b. font-size c. font-style

Q. Define margin properties

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 89 and 90 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **IN THE LAB** section on Page 91 in the main course book. This will enhance the ability of the students and serve as a Creativity activity.

Suggested Activity

Ask the student to create a web page using all the HTML Tags taught in this chapter.

8 Algorithmic Intelligence

Teaching Objectives

Students will learn about:

- Information Processing
- Conditions in a Program

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Begin with introduction of algorithm as a step-by-step instructions in a sequential manner to solve a problem.

Let them know that a flowchart is a pictorial representation of an algorithm.

Make the students aware of information processing.

Make the students understand that Binary code is the most basic form of data that a computer can directly interpret.

Explain about conditions in a program that are required to make certain decisions based on the logic of the program.

Also let them know about if-then-else statements and conditions related to them.

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is algorithm?

Q. What is a flowchart?

Q. Name the base to write a program.

Q. What is information processing?

Q. What is the importance of processing of information?

Q. What is binary code?

Q. Define conditions in a program.

Q. Why are conditional statements used in a program?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 95 to 97 in the main course book as **Exercise**.

Take the students to the computer lab and let them practise the activity given in the **IN THE LAB** section on page 97 in the main course book. This will enhance the ability of the students and foster Critical Thinking and Creativity skills.

Suggested Activity

Ask the students to write any if-then-else conditional statements.

9 Conditional Statements in Python

Teaching Objectives

Students will learn about:

- Decision Making Statements
- The if...else Statement
- The if...elif...else Ladder
- The if Statement
- Nested if Statement

Number of Periods	
Theory	Practical
2	3

Teaching Plan

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

Explain to the students about the Decision Making Statements and the options available in Python.

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

- if statement
- if...else statement
- Nested if statement
- if...elif...else ladder

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 the names of decision making statements?

Q. What is the function of if statement?

Q. What is the function of if...else statement?

Q. What is the function of nested if statement?

Q. What is the function of if...elif...else statement?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 106 to 110 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **IN THE LAB** section on Page 110 in the main course book. This will enhance the ability of the students and serve as Critical Thinking and Technology Literacy activity.

Suggested Activity

Ask the students to make a program in Python to create a food menu using looping decision making statements

10 AI for SDGs

Teaching Objectives

Students will learn about:

- Sustainable Development Goals

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Start the chapter by giving an introduction of SDGs to the students with the help of using real time examples.

Tell the students about Sustainable Development Goals and answer these queries regarding it:

- What are SDGs?
- How they are introduced?
- Why they are introduced?
- Who introduced SDGs?

Briefly explain all the SDGs in detail along with their motives and purpose:

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 SDGs?

Q. How they are introduced?

Q. Why they are introduced?

Q. Who introduced SDGs?

Q. Define the following:

(a) Goal 1
(b) Goal 2
(c) Goal 3
(d) Goal 4
(e) Goal 5
(f) Goal 6
(g) Goal 7
(h) Goal 8
(i) Goal 9
(j) Goal 10

(k) Goal 11
(l) Goal 12
(m) Goal 13
(n) Goal 14
(o) Goal 15
(p) Goal 16

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 117 to 119 in the main course book as **Exercise**.

Take the students to the computer lab and let them practice the activity given in the **IN THE LAB** section on Page 119 in the main course book. This will enhance the ability of the students and serve as an Information Literacy activity.

Suggested Activity

Ask the students to research more about SDGs and ask them to create a poster on SDGs.