C<>DEPILOT

Ver. 5.0

6

TEACHER'S MANUAL
Extended Support for Teachers
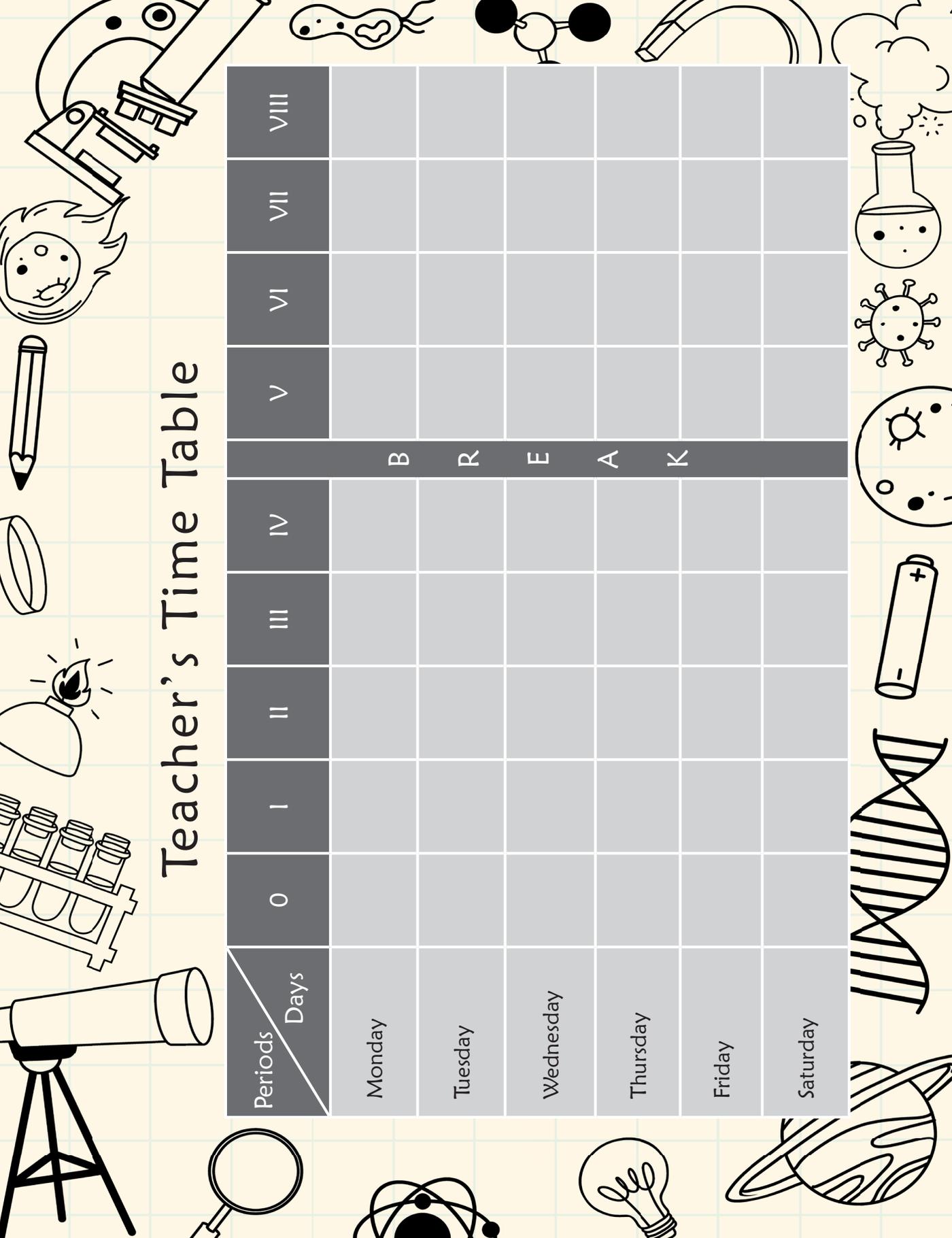
ORANGE

Teacher's Time Table

Periods \ Days	0	I	II	III	IV		V	VI	VII	VIII
Monday						B R E A K				
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
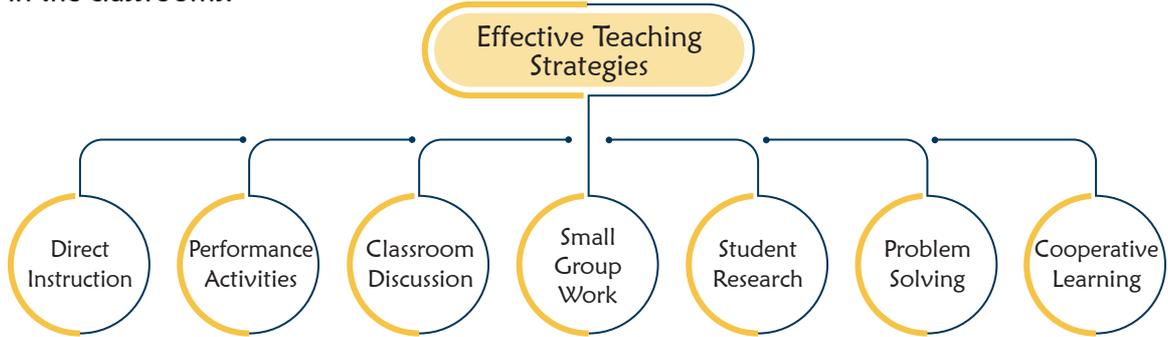- May have a conventional moral orientation

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

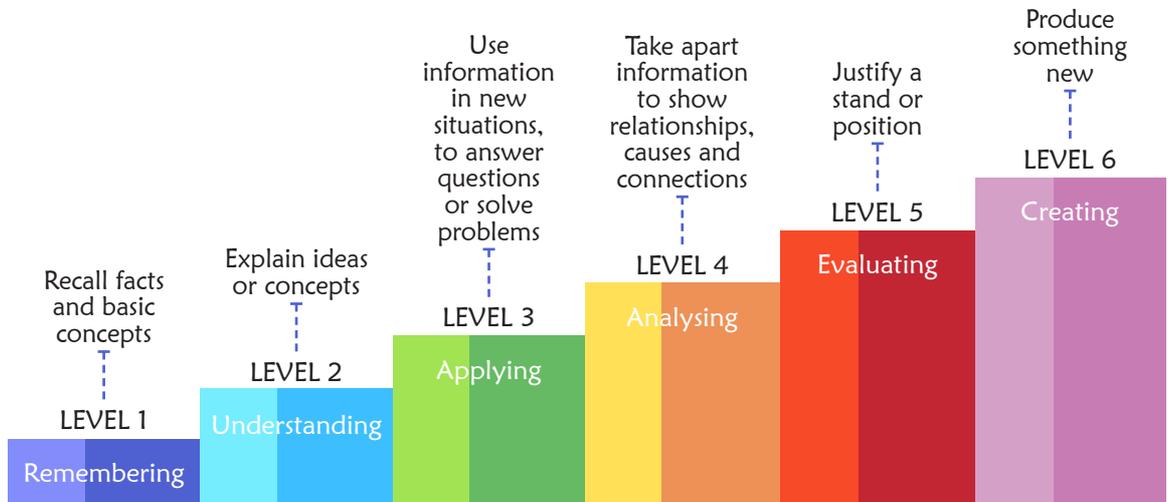" Family is the most important thing in the world. "

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.

Effective Teaching Strategies

- Direct Instruction
- Performance Activities
- Classroom Discussion
- Small Group Work
- Student Research
- Problem Solving
- Cooperative Learning

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.

Recall facts and basic concepts
LEVEL 1
Remembering

Explain ideas or concepts
LEVEL 2
Understanding

Use information in new situations, to answer questions or solve problems
LEVEL 3
Applying

Take apart information to show relationships, causes and connections
LEVEL 4
Analysing

Justify a stand or position
LEVEL 5
Evaluating

Produce something new
LEVEL 6
Creating

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

1 PowerPoint Magic

Teaching Objectives

Students will learn about:

- ✦ Applying Animations
- ✦ Screen Recording
- ✦ Using Action Buttons
- ✦ Printing a Presentation
- ✦ Applying Transitions
- ✦ Ink Annotations
- ✦ Creating a Photo Album

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **8** of the main course book.

Discuss with students how animations and transitions can make presentations more engaging. Ask them about their experiences with animations in presentations.

Explain the importance of animations and transitions in PowerPoint to make presentations engaging and dynamic.

Discuss the different types of animations in PowerPoint, including entrance, emphasis, exit and motion paths.

Students will practice applying basic animations like fade, fly-in and zoom to text and images.

Discuss how timing and sequence affect the flow of animations in a presentation.

Demonstrate how to adjust timing, duration and start options for animations using the Start drop-down list.

Introduce the Animation Painter tool for copying animations from one object to another.

Explain what transitions are and how they control the flow between slides during a presentation.

Introduce the screen recording feature in PowerPoint and explain how to record the screen and embed it directly into a presentation.

Discuss how to use the Draw tab to add handwritten text and use the highlighter tool in PowerPoint.

Introduce action buttons, which allow users to create interactive slides by linking to other slides, files or running media.

Show how to use the Photo Album feature to create a slideshow of images, perfect for personal or professional use.

Teach students the various print options in PowerPoint, such as printing all slides, selecting specific slides or printing handouts.

Extension

Ask the students some questions based on this chapter:

Q. What are the different types of animations you can add in PowerPoint?

Q. How can you change the timing of an animation in PowerPoint?

Q. What is the Animation Pane used for?

Q. How does Animation Painter help in applying animations?

Q. What are transitions in PowerPoint and how do they enhance a presentation?

Q. How do you use screen recording in PowerPoint?

Q. What are ink annotations and when would you use them?

Q. How can action buttons make a presentation interactive?

Q. How do you create a photo album in PowerPoint?

Q. What are the different printing options available in PowerPoint?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **20**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **13** and **19**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** given on page **18**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **13**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **20** to **22** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **23** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **22** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Have students create a presentation on a current event (e.g., Global Warming, Climate Change) that includes animations, transitions, screen recording and photo album features.

Encourage students to share their presentations with classmates for feedback on their creativity and use of PowerPoint features.

2 Explore Excel

Teaching Objectives

Students will learn about:

✦ Auto Fill and Flash Fill
✦ Creating Custom Lists
✦ Formatting Text in a Worksheet
✦ Selecting Cells in a Worksheet
✦ Copying/Moving Data
✦ Using Undo and Redo Features
✦ Adding, Renaming and Deleting Worksheets
✦ Copying and Moving Worksheets
✦ Adjusting Column Width and Row Height
✦ Inserting Cells, Rows and Columns
✦ Deleting Cells, Rows and Columns
✦ Merging Cells

Number of Periods	
Theory	Practical
1	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **25** of the main course book.

Explain Excel as a powerful tool for organizing, analysing and managing data in a tabular format.

Ask students if they have used Excel for organizing information like assignments, budgets or project tasks.

Introduce Auto Fill and Flash Fill as features that help automate repetitive tasks and speed up data entry.

Explain how Auto Fill works to automatically fill cells with data like numbers or dates, continuing a series.

Explain Flash Fill, which automatically fills data based on patterns students start typing, such as splitting full names or formatting phone numbers.

Discuss how custom lists allow users to create their own series, such as days of the week or months.

Introduce basic text formatting options in Excel like bold, italic, underline, font size and font colour.

Explain text alignment options for vertical and horizontal positioning within a cell.

Discuss different ways to select cells, including selecting rows, columns and ranges.

Explain how to select non-adjacent cells using the Ctrl key.

Explain how to copy data from one place to another using Ctrl + C and Ctrl + V.

Explain how to cut and move data using Ctrl + X.

Demonstrate the use Undo to reverse an action and Redo to reapply a reversed action.

Show how to add a new worksheet in Excel.

Demonstrate how to rename a worksheet to make it more meaningful.

Explain how to delete a worksheet when it's no longer needed.

Explain how to insert new cells, rows and columns in Excel.

Explain how to delete cells and shift the remaining data accordingly.

Discuss how to merge cells to combine them into one larger cell, which can be useful for creating headings or organizing data.

Extension

Ask the students some questions based on this chapter:

Q. What is the difference between Auto Fill and Flash Fill?

Q. How do you create a custom list in Excel?

Q. What is the importance of formatting text in a worksheet?

Q. How can you select multiple non-adjacent cells in Excel?

Q. How do you copy and move data in Excel?

Q. What is the shortcut to undo an action in Excel?

Q. How do you add, rename or delete worksheets in Excel?

Q. How do you insert cells, rows and columns in a worksheet?

Q. What happens when you merge cells in Excel?

Q. How can adjusting the column width and row height improve the appearance of your worksheet?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **26**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **28** and **34**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** and **EXPERIENTIAL LEARNING** given on pages **18** and **32**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **36**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **37** to **39** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **39** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **39** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Ask students to create a Student Grades Tracker in Excel. They should begin by setting up a table with columns for Student Names, Subjects, Marks Obtained and Total Marks. Students will enter sample data for five subjects and calculate the percentage for each student using formula. They will also apply conditional formatting to highlight students who scored above 80% in green and those who scored below 40% in red.

3 Digital Citizenship

Teaching Objectives

Students will learn about:

✦ What is Citizenship?

✦ What is Digital Citizenship?

✦ Responsibilities of a Digital Citizen

✦ Rights of a Digital Citizen

✦ Understanding Your Digital Footprint

✦ The Importance of Tracking Your Screen Time

✦ Creating Balance in the Digital Age

Number of Periods	
Theory	Practical
3	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **42** of the main course book.

Discuss the traditional concept of citizenship, which involves being a member of a country with rights and responsibilities. Explain that just like citizens in the real world, digital citizens have rights and responsibilities in the online world.

Introduce digital citizenship as the responsible, ethical and safe use of technology. Explain its importance in creating a positive and respectful online environment.

Ask them to think about how they behave online and how their actions can affect others.

Discuss the importance of sharing content that is helpful and kind online.

Explain the responsibilities of a digital citizen, including respecting others online, protecting personal information, being mindful of digital footprints, using technology ethically, maintaining privacy

settings, sharing positive content and following online rules and guidelines.

Explain that we own our digital content and should respect others' rights, including copyright.

Explain that every time we go online, we leave behind traces of our activities, which form our digital footprint.

Discuss how managing a digital footprint helps us make safer choices online and protect our privacy.

Explain how too much screen time can negatively affect health, sleep and learning.

Discuss the positive impact of managing screen time, such as reducing eye strain and improving physical activity.

Ask students to track their screen time for a day and discuss how they can create a healthier balance between online and offline activities.

Discuss the importance of spending time doing offline activities, like drawing, reading or helping with cooking.

Explain the importance of creating areas in the home where screens are not allowed, such as during family meals or in the bedroom.

Extension

Ask the students some questions based on this chapter:

Q. What does digital citizenship mean and why is it important?

Q. What are the responsibilities of a digital citizen?

Q. Why should we be mindful of our digital footprint?

Q. How can we protect personal information online?

Q. What are some ways to stay safe while exploring the digital world?

Q. How does screen time affect your physical and mental health?

Q. How can you create a balanced routine that includes both online and offline activities?

Q. Why is it important to respect others when using the Internet?

Q. How does cybersecurity help protect us from online dangers?

Q. How can you ensure your digital footprint stays positive?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **47**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **43** and **45**.

Encourage the students to complete tasks like **ART INTEGRATION** given on page **46**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **47** to **49** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **49** in the

main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **49** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Students will design a poster to illustrate the concept of a digital footprint. The poster should highlight the importance of privacy and responsibility in the digital world, including practical tips for keeping a positive footprint.

4 Getting Creative with Canva

Teaching Objectives

Students will learn about:

- ✦ What is Canva?
- ✦ Getting Started with Canva
- ✦ Canva Editor Interface
- ✦ Creating Designs Using Templates
- ✦ Using Canva AI
- ✦ Features of Canva
- ✦ Exploring the Home Page of Canva
- ✦ Create Your First Design
- ✦ Downloading a Design

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **51** of the main course book.

Explain Canva as a popular online graphic design tool that allows users to create posters, social media posts, presentations and more.

Discuss Canva's features, such as user-friendly design, templates and the ability to collaborate in real-time. Highlight its free and paid versions.

Ask if students have ever used Canva for creating posters, presentations or social media posts.

Demonstrate the steps to sign up for Canva using email and explain the basic interface.

Discuss the key components of the Canva home page, such as the search bar, create button, templates and projects.

Introduce the Canva editor interface and its components: Header, Object Panel, Footer and Canvas.

Explain how the header contains tools for managing designs and the footer contains options like

zoom, grid view and full-screen mode.

Explain how to create designs from scratch or use pre-made templates for projects like posters, invitations or social media posts.

Explain how to resize elements using the corners and group them for easier movement.

Explain Canva AI as a tool that helps users design more efficiently by providing suggestions and ideas based on user input.

Explain how to customize the suggestions provided by Canva AI.

Explain how to download designs in different formats (PNG, JPG, PDF) and the automatic saving feature in Canva.

Students will finalize their birthday invitation and download it as a PNG file for printing.

Extension

Ask the students some questions based on this chapter:

Q. What is Canva and what types of designs can you create using it?

Q. How does Canva AI help in the design process?

Q. What are the components of the Canva Editor Interface?

Q. How do you add elements like text, shapes and images to a design in Canva?

Q. How do you group multiple elements together in Canva?

Q. What are the steps to download a design in Canva?

Q. What is the role of the Projects tab in Canva?

Q. How can you use Canva templates to create designs?

Q. What are the advantages of using Canva over other design software?

Q. How can Canva AI help you design more efficiently?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **58**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **53** and **56**.

Encourage the students to complete tasks like **ART INTEGRATION** given on page **56**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **60** and **61** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **62** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **61** in the main course book. This will enhance the ability of the students and serve

as a **technology literacy** activity.

Suggested Activity

Create a Cyber Safety Poster using Canva, highlighting the importance of using strong passwords, recognizing suspicious links and avoiding personal information sharing online. Encourage students to use Canva templates, AI suggestions and design elements to create an informative and visually engaging poster.

5 Algorithms, Flowcharts & System Maps

Teaching Objectives

Students will learn about:

✦ Algorithm

✦ Flowchart

✦ System Map to Show Relationships

✦ Debugging Instructions to Fix Errors

Number of Periods	
Theory	Practical
3	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **64** of the main course book.

Introduce the concept of algorithms as step-by-step instructions or rules designed to perform a specific task or solve a problem.

Discuss how algorithms are used in computing, daily activities and problem-solving. Explain their role in making tasks easier.

Explain that the algorithm should break down complex tasks into clear and simple steps.

Discuss the importance of testing algorithms to check for errors early.

Introduce flowcharts as diagrams that use symbols and arrows to show steps in an algorithm.

Discuss common flowchart symbols:

• **Terminal (Start/Stop):** Marks the start and end points of the process.

• **Process:** Represents an action or step in the algorithm.

• **Input/Output:** Shows where data enters or exits the system.

• **Decision:** Indicates a point where a decision is made (Yes/No).

• **Flow Line/Arrow:** Shows the direction of flow between steps.

Explain that **system maps** show how different parts of a system are connected and affect each other.

Explain reinforcing and balancing feedback loops and how they affect a system's stability.

Introduce debugging as the process of finding and fixing errors in a system or program.

Explain the importance of logical thinking and careful step-by-step planning.

Extension

Ask the students some questions based on this chapter:

Q. What is an algorithm and why is it important in solving problems?

Q. How does a flowchart help in understanding an algorithm?

Q. What are the different types of feedback loops in system maps and how do they affect systems?

Q. How can debugging improve the effectiveness of a program?

Q. What are the key symbols used in flowcharts and what do they represent?

Q. How can a system map help understand complex systems and their relationships?

Q. What is the importance of clear steps when writing an algorithm?

Q. What are the guidelines for creating flowcharts?

Q. How does algorithmic intelligence help computers make decisions?

Q. Why is it important to test algorithms to find errors early?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **71**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **68** and **72**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** given on page **69**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **73** and **74** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **75** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **74** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Students will design a flowchart to decide whether or not to click a suspicious link based on questions like "Is it from a trusted source?" and "Does the link look safe?

Ask students to design an algorithm for preparing a PowerPoint presentation on a topic of their choice.

6   Touch to Motion with MIT

Teaching Objectives

Students will learn about:

+ Touch Events
+ Drawing and Animation
+ Creating an App Using Touch Events
+ Sensors
+ Creating an App Using Sensors

Number of Periods	
Theory	Practical
1	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **80** of the main course book:

Introduce touch events as actions that occur when a user interacts with a mobile screen.

Discuss the types of touch events such as Touch Down, Touch Up, Click and Touch Move.

Introduce the Canvas in MIT App Inventor, which acts as a blank canvas for drawing or moving objects.

Show how UI components like buttons, labels and text boxes can interact with the canvas to create engaging and responsive apps.

Explain that the Magic Pad app allows users to draw with their finger and change colours on the screen.

Introduce sensors as components in MIT App Inventor that allow apps to interact with the environment.

Discuss various sensors like the Accelerometer, Location Sensor, Pedometer Sensor and others, explaining their functions.

Demonstrate how students can create and test the Pedometer app on their devices, ensuring it functions correctly.

Extension

Ask the students some questions based on this chapter:

Q. What is a touch event and why is it important in app development?

Q. Name and explain the different types of touch events.

Q. How does the Canvas component work in MIT App Inventor?

Q. What are the main components needed to create the Magic Pad app?

Q. How do sensors enhance the functionality of mobile apps?

Q. What is the Pedometer Sensor and how can it be used in apps?

Q. What are some real-life applications of the Accelerometer Sensor?

Q.. How do buttons interact with the Canvas in MIT App Inventor?

Q. How can you create an interactive drawing app using MIT App Inventor?

Q. What are the advantages of using MIT App Inventor for mobile app development?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **90**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **81** and **85**.

Encourage the students to complete tasks like **EXPERIENTIAL LEARNING** given on page **84**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **90** to **92** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **92** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **92** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Create a game where the phone's movement controls the character's actions, such as tilting to move a character or shaking to score points. Students will test the app and ensure it correctly working.

7 HTML5–Getting Started

Teaching Objectives

Students will learn about:

- ✦ HTML
- ✦ Features of HTML5
- ✦ Tags and Attributes
- ✦ Structure of an HTML5 Document
- ✦ Displaying a Web Page in a Web Browser
- ✦ Basic HTML Tags
- ✦ History of HTML
- ✦ HTML Editor
- ✦ Rules for Writing HTML5 Code
- ✦ Creating and Saving an HTML Document
- ✦ Editing an Existing HTML Document
- ✦ Comments

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **95** of the main course book.

Introduce HTML as the standard markup language for creating web content such as text, images, links, videos and audio.

Discuss the history of HTML, from its invention by Tim Berners-Lee in 1993 to the introduction of HTML5 in 2014.

Ask students if they have ever visited a website and explain that these websites are built using HTML.

Discuss the features of HTML5, including its compatibility across devices (computers, tablets, phones), its easy-to-learn nature and its support for multimedia.

Explain that HTML documents can be created with simple text editors such as Notepad or WordPad, but knowing HTML tags is essential.

Discuss WYSIWYG editors, which allow developers to see the final design as they create a page.

Explain the concept of tags in HTML, such as <HTML>, <HEAD>, <BODY>, <TITLE> and <P>.

Syntax: Tags are enclosed in angle brackets and typically come in pairs (opening and closing tags).

Discuss the two types of tags:

- **Container tags:** which enclose content, e.g., <P>...</P>.
- **Empty tags:** which do not have closing tags, e.g., <BR> for line breaks.

Discuss the basic structure of an HTML document, including the DOCTYPE, <HTML>, <HEAD> and <BODY> tags.

Demonstrate the process of creating and saving an HTML document using Notepad and view it in a web browser.

Explain how to edit an HTML document by opening the file in Notepad and making changes. Discuss how to view the changes by pressing F5 in the browser.

Discuss how the <Hn> tags define headings from <H1> (largest) to <H6> (smallest).

The <P> Tag: Explain the <P> tag for paragraphs and its default left-alignment.

Discuss other tags like <B>, <I>, <U>, <BR> and <HR> for text formatting and line breaks.

Demonstrate the use of HTML tags with their respective programs, showing how each tag functions in creating a webpage.

Extension

Ask the students some questions based on this chapter:

Q. What is the purpose of the <TITLE> tag in HTML?

Q. How does the <Hn> tag help organize web content?

Q. What is the difference between container tags and empty tags?

Q. How do you add a line break in HTML?

Q. What is the function of the <HR> tag?

Q. Why is it important to nests tags properly in HTML?

Q. What is the difference between a web page and a website?

Q. How do you save an HTML document in Notepad?

Q. Why is HTML5 significant in web development?

Q. How does the <BODY> tag differ from the <HEAD> tag?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **100**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **96** and **104**.

Encourage the students to complete tasks like **EXPERIENTIAL LEARNING** given on page **105**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **105**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **106** and **108** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **109** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **108** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Students will design a web page for Teacher's Day using HTML, adding headings and paragraphs to express gratitude to their teachers. Students should use HTML tags such as <H1> for the title, <P> for text and <BR> for line breaks.

8 CSS3–Styling Basics

Teaching Objectives

Students will learn about:

- Introducing CSS
- Syntax of CSS
- Types of CSS
- Background Properties
- Text Properties
- Font Properties
- Border Properties
- Margin Properties

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **112** of the main course book.

Discuss with students how websites appear visually appealing and why CSS is used to style HTML elements. Ask students to identify examples of good website design.

Explain the purpose of CSS in web design as it controls the layout, color, font and overall appearance of a webpage. CSS enhances the design elements created with HTML (Page 2).

Introduce the basic syntax of CSS: SELECTOR {PROPERTY: VALUE;} where the selector targets the HTML element, the property defines the style and the value specifies the style to apply.

Types of CSS

*   **Inline CSS:** Define inline CSS, which applies styles to a single element directly within the HTML tag using the STYLE attribute.

*   **Internal CSS:** Discuss how internal CSS is written within the <STYLE> tag in the <HEAD> section of the HTML document and applies styles to all elements of the same type.

*   **External CSS:** Explain how external CSS is stored in a separate .css file and linked to the HTML file using the <LINK> tag. This method is ideal for larger websites for consistency and easier management.

Discuss the various background properties such as BACKGROUND-COLOR, BACKGROUND-IMAGE, BACKGROUND-REPEAT and BACKGROUND-POSITION (Page 7).

Introduce the use of CSS properties like COLOR for text colour, TEXT-ALIGN for alignment, TEXT-TRANSFORM for text case, TEXT-DECORATION for text effects and TEXT-SHADOW for adding shadow effects to text.

Introduce font-related properties like FONT-FAMILY, FONT-SIZE, FONT-WEIGHT and FONT-STYLE to customize text appearance.

Explain how margin properties such as MARGIN-TOP, MARGIN-RIGHT, MARGIN-BOTTOM and MARGIN-LEFT are used to create space around HTML elements.

Extension

Ask the students some questions based on this chapter:

Q. What are the key features of CSS that enhance web page design?

Q. How does Inline CSS differ from Internal CSS?

Q. How does External CSS help in maintaining consistency across multiple pages?

Q. What are the different background properties you can use in CSS?

Q. How can you change the font style and font size in CSS?

Q. What is the purpose of the TEXT-ALIGN property in CSS?

Q. How do you create a shadow effect for text in CSS?

Q. What is the role of BORDER properties in CSS?

Q. How does MARGIN help in adjusting the spacing between elements on a webpage?

Q. How can you make a web page responsive with CSS?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **117**.

Ask the students to complete the elements like **RAPID RECALL** given on page **116**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** given on page **122**.

Motivate the students to complete activities such as **LIVE LEARNING** on page **119**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **123** and **124** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **125** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **124** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Create a Web Page: Design a webpage titled **Healthy Eating Habits** with a heading and paragraph.

Set a background image and adjust it to fit the page.

Give the heading a medium purple background.

Change the paragraph font to Verdana, size 4 and color to dark green.

Add some spacing around the heading and paragraph using margin or padding.

Save the page and view it in a browser.

9 Python–Start to Code

Teaching Objectives

Students will learn about:

- ✦ Computer Languages
- ✦ Python
- ✦ Modes in Python
- ✦ Input and Output
- ✦ Language Translator
- ✦ Installing Python
- ✦ Opening an Existing Program
- ✦ Character Set

- ✦ Keywords and Identifiers
- ✦ Data Types
- ✦ Operators
- ✦ Some More Programs

- ✦ Variables in Python
- ✦ Comments in Python
- ✦ Precedence of Operators

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **127** of the main course book.

Understand the concept of computer languages and learn about the different generations of computer languages (from 1GL to 5GL).

Explain the different types of language translators.

Introduce Python as a simple, powerful and versatile programming language used in web development, data analysis, AI and more.

Explain how to install Python on computers (steps provided in the text) and ensure it's ready to use.

Explain Shell Mode as an interactive way to execute Python code line-by-line.

Discuss Script Mode for writing and saving Python programs that can be run later.

Describe the two main components of the IDLE Shell Window is Menu Bar and the Prompt.

Explain how the input() function is used to take input from the user and how to store that input in variables and print() function to display the output of a program on the screen.

Introduce keywords in Python, which are reserved words used to perform specific tasks. And discuss identifiers as names used to uniquely identify variables, functions or classes.

Explain how variables store values in Python and discuss rules for naming variables.

Discuss the commonly used data types in Python: int (integer), float (real numbers) and string.

Introduce the various operators in Python, such as arithmetic operators, relational operators and logical operators.

- • **Arithmetic Operators:** Use operators like **+, -, *, /** to perform calculations.
- • **Relational Operators:** Use operators like **==, !=, >, <** to compare values.
- • **Logical Operators:** Use **and or** and not to combine conditions.
- • **Assignment:** Use operators like **=, +=, -=, *=** etc... to Assign values.

Explain the precedence of operators.

Demonstrate some Python programs to perform arithmetic operations like adding two numbers or checking if a number is greater than another.

Extension

Ask the students some questions based on this chapter:

Q. What is the purpose of Python in programming?

Q. What is the difference between Shell Mode and Script Mode in Python?

Q. How do you declare and initialize a variable in Python?

Q. What are the basic data types in Python?

Q. What is the use of the input() function in Python?

Q. What are keywords and why can't they be used as variable names?

Q. How do logical operators differ from arithmetic operators in Python?

Q. What is an identifier in Python and how is it different from a keyword?

Q. How can comments be added in Python and why are they useful?

Q. How do you use relational operators to compare two values in Python?

Evaluation

Ask the students to complete the elements like A**SK AI AGENT** given on page **131**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **134** and **143**.

Encourage the students to complete tasks like **INTERDISCIPLINARY LEARNING** given on page **143**.

Motivate the students to complete activities such as **LIVE LEARNING** on pages **138**, **139** and **140**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **146** and **147** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **149** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **148** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Write a Python program that calculates the simple interest using the formula Simple Interest = (P * R * T) / 100. Where P is the principal, R is the rate and T is the time. Have students test the program with different inputs to ensure accuracy.

10 Tinkercad–Shape Your Ideas

Teaching Objectives

Students will learn about:

- Understanding 2D and 3D Shapes
- Starting Tinkercad
- Components of the Tinkercad 3D Design Window
- Working with Shapes
- Sharing Your Design
- Introduction to Tinkercad
- Saving Your Design

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in **BRIDGE BACK** given on page **151** of the main course book.

Explain 2D shapes (two-dimensional) like circles, squares and rectangles that only have length and width, but no depth.

Introduce 3D shapes (three-dimensional) like cubes, spheres and pyramids that have length, width and height and take up space in the real world.

Ask students to list examples of 2D and 3D shapes they encounter daily (e.g., books, cups, etc.).

Introduce Tinkercad as a simple, easy-to-use 3D design and modelling software that allows users to create 3D objects for various projects like 3D printing.

Discuss how 3D modelling is used in everyday life and industries such as architecture, product design and 3D printing.

Discuss how to create an account on the Tinkercad website and sign up as a student or personal account.

Explain the various components of the Tinkercad 3D Design Window, including the Top Toolbar, Shapes Panel, Navigation Buttons, ViewCube and Workplane Tool.

Demonstrate how to drag and drop basic 3D shapes like cubes, spheres and cylinders from the Shapes Panel onto the Workplane.

Explain how to resize, rotate and move shapes on the workplane using the tools provided.

Show students how to save their projects in Tinkercad, allowing them to return and edit their designs later.

Explain how to export their designs in formats such as. STL, .OBJ or .SVG for printing or further use.

Explain how students can share their designs with others by clicking the Send To button and copying the link.

Extension

Ask the students some questions based on this chapter:

Q. What is the difference between 2D shapes and 3D shapes?

Q. How do you add and manipulate shapes in Tinkercad?

Q. What is the purpose of the Workplane in Tinkercad?

Q. How can you resize or rotate a shape in Tinkercad?

Q. How do you save and export your designs in Tinkercad?

Q. What is the use of the ViewCube in Tinkercad?

Q. How do you create complex models by combining simple shapes?

Q. Why is sharing your design important when working on collaborative projects?

Q. What are the applications of 3D modeling in various fields?

Q. How does grouping shapes in Tinkercad help in designing models?

Evaluation

Ask the students to complete the elements like **ASK AI AGENT** given on page **162**.

Ask the students to complete the elements like **RAPID RECALL** given on pages **152** and **162**.

Encourage the students to complete tasks like **EXPERIENTIAL LEARNING** given on page **162**.

After explaining the chapter, let the students do the **LEARNING LOGS** on pages **164** and **165** in the main course book. Tell the students to try sections such as **CODE CHECK** given on page **166** in the main course book.

Take the students to the computer lab and let them practice the activity given in the **LAB LEARNING** section on page **166** in the main course book. This will enhance the ability of the students and serve as a **technology literacy** activity.

Suggested Activity

Students will design a keychain in Tinkercad, resizing and grouping various shapes to fit the design.

Add custom text to the model and modify the color using the shape properties.

Export the design in STL format for 3D printing (optional).