Computer Genius!

Ver. 2.1

3

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

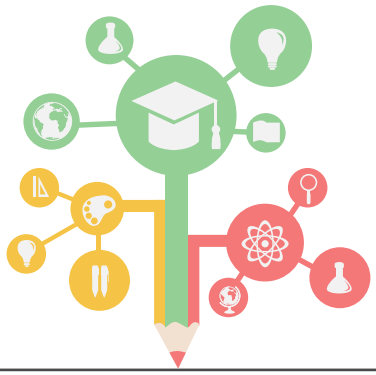
Age 11 - 20 Years

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.

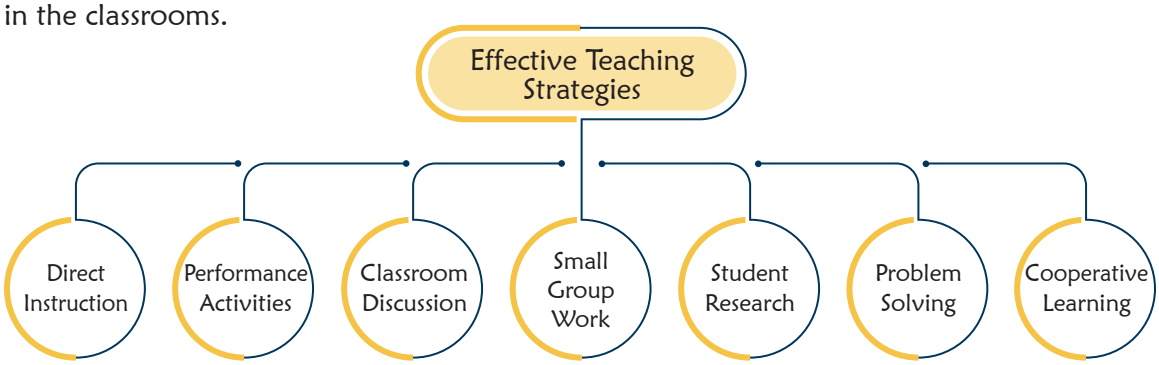
After the class

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

"Knowing yourself is the beginning of all wisdom."

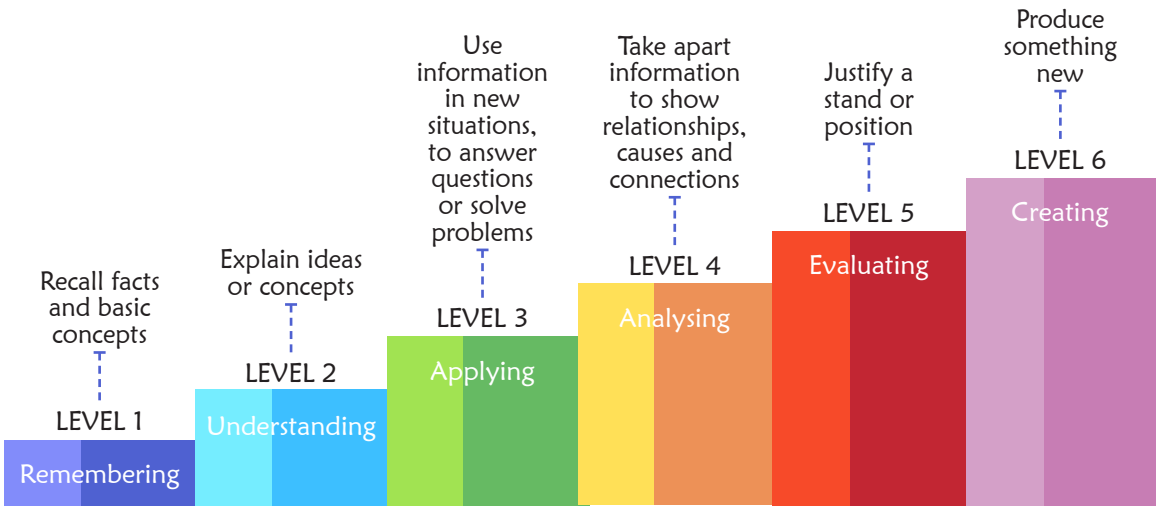
Teaching Strategies

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 3

Lesson Plan

1 Introduction to Windows 10

Teaching Objectives

Students will learn about

- Operating System
- How to Start a Computer
- Components of Desktop
- Hiding Desktop Icons
- Setting the Screen Saver
- How to Shut Down a Computer
- Windows 10
- Desktop
- Sorting Desktop Icons
- Changing Desktop Background
- Mouse Pointer Shapes

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to Solve the question in 'Let's Recap' given on page 7 of the main course book.

While teaching this chapter, let the students know about Operating System.

Make the students aware of Windows 10.

Recognize basic differences between GUI (Graphical User Interface) and CUI (Character User Interface).

Demonstrate the steps involved to start the computer.

Explain to the students about features of Windows 10 and its desktop.

Give explanations of icons, taskbar.

Share with them different parts of taskbar – Start menu, notification area, etc.

Tell the students steps to Sort icons and hide icons.

Tell them about desktop background and steps to change desktop background. Also show the steps involved in hiding desktop icons.

Let the students know about the steps of setting the screen saver.

Share the shapes of mouse pointers.

Demonstrate the steps involved to shut down the computer.

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

Ask the students to solve the exercise given on page 14 as Quest.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain some features of Windows 10.

Q. What are icons?

Q. What is a taskbar?

Q. What do you mean by start menu?

Q. Explain desktop background

Q. What is screensaver?

Q. Discuss different mouse pointers briefly.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 15 and 16 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone activity given on page 17 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 17 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Lab Activity given on page 17 of the main course book will enhance the ability of the students and serve as a creativity & innovativeness, collaboration & team work, digital literacy and experiential learning activity.

Suggested Activity

Show pictures of desktops and icons, etc. of some older versions of Windows and help students note noticeable changes in the interface of these versions of Windows over time.

2 Editing and Formatting on Word

Teaching Objectives

- Features of Word 2016
- Editing the Text
- Formatting the Text
- Difference Between Editing and Formatting
- Shortcut Keys

Number of Periods	
Theory	Practical
1	3

Teaching Plan

Before starting the chapter, ask the students to Solve the question in 'Let's Recap' given on page 18 of the main course book.

While teaching this chapter, tell the students that formatting the text means changing the appearance and arrangement of the text.

Share with the students the features of a Word 2016 document.

Demonstrate to the students the method of editing text.

Tell the students the concept of formatting the text.

Introduce student with the difference between editing and formatting.

Tell the students about different shortcut keys present that you can use.

Ask the students to solve the exercise given on page 30 as Quest.

Extension

Ask the students some oral questions based on this chapter.

Q. Define formatting a text.

Q. What is editing the text?

Q. Discuss about different types of text editing.

Q. What is the difference between editing and formatting the text?

Q. Give any 5 examples of shortcut keys.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 33, 34 and 35 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone activity given on page 35 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 35 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Lab Activity on page 36 of the main course book will enhance the ability of the students and serve as interdisciplinary learning and experiential learning.

Suggested Activity

Ask the students to collect write a paragraph on My Favourite Sport in Word 2016 applying various formatting features to make the paragraph attractive.

3 Pivot Animator

Teaching Objectives

- Uses of Pivot Animator
- Components of Pivot Animator App
- Saving an Animation Project
- Creating a Figure in Pivot Animator
- Getting Started with Pivot Animator
- Creating Simple Animation
- Exporting an Animation
- Loading the Figure

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 38 of the main course book.

Introduce Pivot Animator as a simple and free animation tool used to create stick figure animations.

Explain the uses of Pivot Animator, such as creating short stories, designing custom characters, and exporting animations as GIFs or videos.

Discuss the steps involved in downloading and installing Pivot Animator from its official website.

Show the steps involved in starting Pivot Animator v5.

Make the students aware about all the components of Pivot Animator app window:

- **Title Bar:** Displays the app name and project title.
- **Menu Bar:** Provides options to manage projects.
- **Frame Controls:** Allows adding, deleting, and navigating frames.
- **Player Controls:** Lets users play, pause, and loop animations.
- **Background Button:** Adds or changes backgrounds.
- **Add Figure Button:** Allows adding new stick figures.
- **Figure Controls:** Used to move, rotate, or resize figures.
- **Add Frame Button:** Adds a new frame to the animation sequence for smooth motion.
- **Frame Panel:** Displays animation frames in a timeline.
- **Canvas:** Refers to the area where you create and animate your stick figures.
- **Figure:** Refers to the stick figures made of segments and joints in your animation.
- **Segment Handle:** Lets you reposition or resize a figure's segment.
- **Origin Handle:** Acts as the pivot point for rotating the figure.
- **Status Bar:** Shows information like the current frame number, speed, and active tool.

Show the steps involved in creating a simple animation with example.

Demonstrate the steps involved in saving an animation project with an example.

Show to the students the steps involved in exporting an animation project to turn your project into a finished file, like a GIF or video.

Explain the steps involved in creating a custom stick figure in Pivot Animator with an example.

Demonstrate the steps involved in loading the custom stick figure to use it for creating an animation.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Pivot Animator used for?

Q. How does adding frames help in animation?

Q. What is the difference between saving and exporting an animation?

Q. How do you create a custom stick figure?

Q. Name of 3 components of Pivot Animator window.

Q. Which component of Pivot Animator let you play, pause, stop and loop the animation?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 47 and 48 in the main course book as Exercise. After solving the course book exercises, tell the students to solve Fun Zone activity given on page 48 of the main course book. Ask the students to answer the questions given as Competency-based/Application-based questions on page 48 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Lab Activity given on page 48 of the main course book will enhance the ability of the students and serve as a technology literacy activity.

Suggested Activity

Ask the students to collect write a paragraph on My Favourite Sport in Word 2016 applying various formatting features to make the paragraph attractive.

4 Introduction to Internet

Teaching Objectives

Students will learn about

- Uses of Internet
- Requirements for an Internet Connection
- Internet Terms
- Microsoft Edge

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to Solve the question in 'Let's Recap' given on page 49 of the main course book.

While teaching this chapter, tell the students that Internet is a network in which millions of computers are connected to each other to share information and is an abbreviation of International Network.

Explain to the students the various uses of internet.

Share with the students the various requirements for an internet connection covering computer, telephone/cable line, modem/network card, software and company providing the connection.

Introduce the students to common internet terms like Website (collection of related web pages), Web Page (electronic page on a website), Home Page (main or first page of website), World Wide Web (largest collection of websites) and Web Browser (software to open websites).

Familiarise the students with the most common web browser, Microsoft Edge and its components covering Title bar, More, Current Tab, Back/Forward, New Tab, Refresh, Address Bar.

Make the students understand the use of common tools on the toolbar covering Back, Forward, Refresh and Stop buttons.

Ask the students to solve the exercise given on page 51 Quest.

Extension

Ask the students some oral questions based on this chapter.

Q. What is internet?

Q. What are the uses of internet?

Q. What are the requirements for an internet connection?

Q. Define Website / Web Page / Home Page / World Wide Web / Web Browser.

Q. What does WWW stand for?

Q. Which is the most common Web Browser?

Q. Define Title Bar / Menu Bar / Toolbar / Address Bar.

Q. What is the use of Back / Forward / Stop / Refresh button in a web browser?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 52 and 53 of the main course book as Exercise. Tell the students to solve Fun Zone activity given on page 53 of the main course book. Ask the students to answer the questions given as Competency-based/ Application-based questions on page 53 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity Lab Activity given on page 53 of the main course book will enhance the ability of the students and serve as Technology Literacy activity.

Suggested Activity

Ask the students to paste a picture of Internet Explorer in their computer notebook / practical file and label its components and tools discussed in the chapter.

5 Stepwise Thinking

Teaching Objectives

Students will learn about

- Simple Instructions
- Decision Making
- Loops
- Understanding Programs

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on page 54 of the main course book.

Begin with description of simple instructions and make them understand how the order of instructions is important to do a task successfully.

Explain the Stepwise Thinking to the students with the steps involved in the process using suitable examples.

Tell the students about decision making and give a brief introduction about it.

Introduce Looping to the students with simple example.

Ask the students to solve the exercise Quest given on page number 57.

Extension

Ask the students some oral questions based on this chapter.

Q. What are instructions?

Q. Write the sequence of instructions to make a fruit salad.

Q. What is stepwise thinking?

Q. What decision making?

Q. Write a decision making situation involving 'if', 'then' and 'otherwise'.

Q, Define loopinhg.

Evaluation

After explaining the chapter, let the students do the exercises given on page 59 in the main course book. Tell the students to try sections such as Fun Zone given on page 60 in the main course book.

Ask the students to answer the questions given as Competency-based/ Application-based questions on page 60 of the main course book. Help the students to solve these questions.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 61 in the main course book. This will enhance the ability of the students and serve as a creativity and social Interaction activity.

Suggested Activity

Ask the students to write a decision making situation.

6 Introduction to Scratch

Teaching Objectives

Students will learn about

- Scratch
- Starting Scratch
- Components of Scratch Window
- Adding a Sprite
- Changing the Backdrop
- Changing Appearance of the Sprite
- Exiting Scratch

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 65 of the main course book.

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

Demonstrate to the students the steps to start Scratch 3.0.

Make the students understand the uses of Scratch.

Familiarise the students with the various components of Scratch window covering Title bar, Menu bar, Sprite, Stage Area, Script, Coding Area, Block Menu, Backdrop, Tabs, Go Button and Stop button.

Show the students the steps to add a sprite from the Library.

Tell the students the steps to change the backdrop in Scratch.

Tell the students the steps to change the appearance of sprite in scratch

Tell the steps to exiting Scratch.

Ask the students to solve the exercise Quest given on page number 69.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. What are the uses of Scratch?

Q. Name the various components of Scratch window.

Q. Define Sprite / Stage / Scripts Area / Go button / Stop button.

Q. What is a backdrop in Scratch?

Q. What are the steps to exit Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on page 70 and 71 in the main course book as exercise.

Ask the students to answer the questions given as Competency-based/ Application-based questions on page 72 of the main course book. Help the students to solve these questions.

Take the students to the computer lab and let them practice the activity given in the Fun Zone section on page 72 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 develop a program of speaking and moving cat in Scratch.

7 More on Scratch

Teaching Objectives

Students will learn about

- Block Categories
- Setting the Sprite Position
- Programs in Scratch
- Creating a New Project
- Saving a Project
- Opening a Project

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 73 of the main course book.

Tell the students to recall about Scratch and revise the components of Scratch window components.

Explain the Block categories and its types using appropriate examples:

- Motion blocks
- Looks blocks
- Sound blocks
- Events blocks
- Control blocks

Introduce Motion Blocks for changing placement, direction, rotation and movement of sprites.

Show the students how to change the sprite position with suitable example.

Demonstrate the use of blocks by creating a new project.

Tell the steps to save a program and opening a Scratch project.

Ask the students to solve the exercise Quest Up given on page number 75.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. What are blocks?

Q. What is motion block?

Q. What is the use of Motion block?

Q. What is the colour code for Motion block?

Q. What are the steps to save a project in Scratch?

Q. What are the steps to open a project in Scratch?

Q. What is looks block?

Q. What is sound block?

Q. What is control block?

Q. How to change sprite's position?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 80 and 81 in the main course book as exercise.

Take the students to the computer lab and let them practice the activity given in the Fun Zone section on page 81 in the main course book. This will enhance the ability of the students and serve as a Critical Thinking activity.

Ask the students to answer the questions given as Competency-based/ Application-based questions on page 82 of the main course book. Help the students to solve these questions.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 82 in the main course book. This will enhance the ability of the students and serve as experiential learning and information literacy activity.

Suggested Activity

Ask the students to create a program in Scratch to move sprite 360 degree and reverse to its original position.

8 Applications of AI

Teaching Objectives

Students will learn about

- Smartphone
- Smart Speaker
- Smartwatch
- Chatbot
- Smart TV
- Smart Doorbell
- Driverless Car

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 84 of the main course book.

While teaching this chapter, tell the students that Artificial Intelligence has become an important part of our lives.

Make them understand about the following:

- Smartphone

- Smartwatch
- Chatbot
- Smart TV
- Smart Doorbell
- Driverless Cars
- Smart Speakers

Show the pictures of AI-enabled devices to the students.

Also, teach the students through Topic Animation.

Ask the students to solve the exercise given on page 87 as Quest.

Extension

Ask the students some oral questions based on this chapter.

Q. What are smartphones?

Q. What do you mean by a chatbot?

Q. Name an AI-enabled doorbell that informs the homeowner when a visitor arrives at the door.

Q. Which device accepts our voice commands to play music?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 88 and 89 of the main course book as Exercise. Tell them to solve the technology literacy and critical thinking exercises as Fun Zone given on page 89.

Ask the students to answer the questions given as Competency-based/ Application-based questions on page 90 of the main course book. Help the students to solve these questions.

Take the students to the computer lab and let them practice the activity given in the Lab Activity section on page 90 in the main course book. This will enhance the abilities of the students and serve as Creativity and Art Integration Learning Activity.

Suggested Activity

Ask the students to open the link given below and play TicTacToe.

https://playtictactoe.org/

9 Introduction to Robots

Teaching Objectives

Students will learn about

- What is a Robot?
- Popular Robots
- Advantages of Robots
- Disadvantages of Robots

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in Let's Recap given on Page 91 of the main course book.

While teaching this chapter, tell the students that most of the smart devices are made to help us in doing our work fast and efficiently. Similarly, robots are also made to help us.

Make them understand that a robot is a smart machine which can resemble human behaviour and can perform various tasks.

Share information about the popular robots with the students.

Show the pictures of different robots and also explain their role to the students.

Also, tell the advantages and disadvantages of robots to the students.

Ask the students to solve the task given on page 94 as Quest.

Encourage the students to walk through the chapter and ask them to play the game given on page 95 on their own under the name AI Game after learning about the rules and basics.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a Robot?

Q. Which is known as a lovable robotic dog whose personality and behaviour changes with time?

Q. What is the advantage of using a Robot?

Q. What is the name of a delivery robot that delivers food items?

Q. Which robot can move as quickly as 3.2 meters per second?

Q. What is the disadvantage of using a Robot?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 96 and 97 of the main course book as Exercise. Tell them to solve the critical thinking and technology literacy skill-developing exercises as Fun Zone given on page 97.

Ask the students to answer the questions given as Competency-based/ Application-based questions on page 97 of the main course book. Help the students to solve these questions.

Take the students to the computer lab and let them practice the activity given in the Lab Activity section on Page 97 in the main course book. This will enhance the abilities of the students and serve as Communication and Social Interaction Activity.

Suggested Activity

Ask the students to collect pictures of atleast 10 different robots and paste them in an A-3 size sheet. Also, write their names on the sheet.