8

TOUCHPAD®

PLUS Ver. 1.1

Teacher's Manual

Extended Support for Teachers

ORANGE®
www.orangeeducation.in
www.thetouchpad.com

Teacher's Time Table

Periods / Days	0	I	II	III	IV		V	VI	VII	VIII
Monday						B				
Tuesday						R				
Wednesday						E				
Thursday						A				
Friday						K				
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 to 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 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 needs 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.

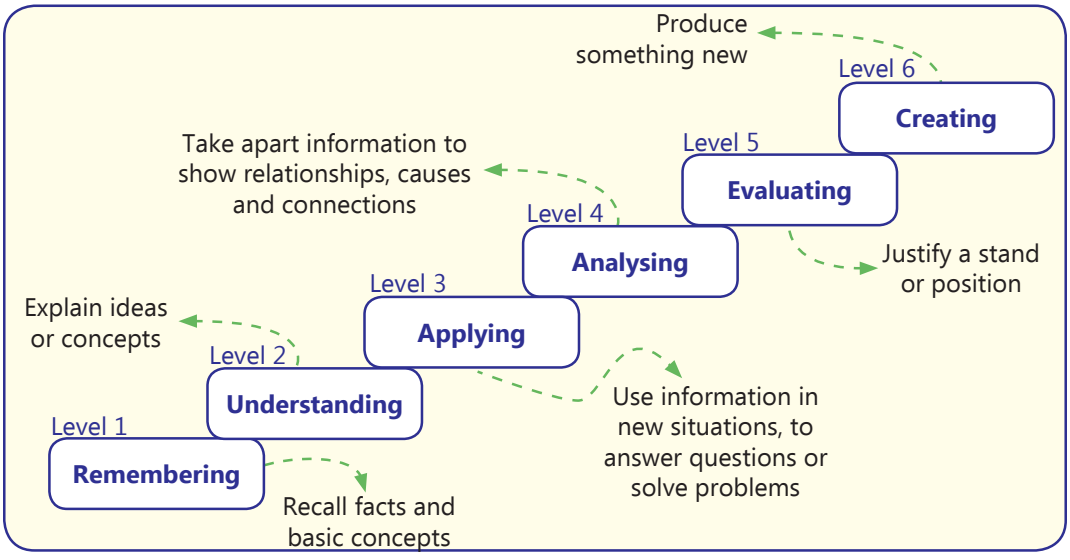
"Knowing yourself is the beginning of all wisdom."

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 8

LESSON PLAN

Touchpad Ver 1.1

1. Computer Networking

Teaching Objectives

Students will learn about

- Computer network
- Need for computer network
- Advantages of computer network
- Network terminology
- Components required for a network
- Types of network
- Topology
- Network architecture
- Wireless networking technology
- Protocol

Number of Periods	
Theory	Practical
2	1

Teaching Plan

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

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

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

Discuss with the students the advantages of a computer network.

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

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

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

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

(Personal Area Network) and CAN (Campus Area Network).

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

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

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

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

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

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

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

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define computer network.

Q. What is the need for a computer network?

Q. What are the advantages of a computer network?

Q. Define server / client.

Q. What are the different types of computer servers?

Q. What are the components required for a network?

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

Q. Define Topology.

Q. Name different types of topologies.

Q. What is meant by protocol?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 14 and 15 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on page 16 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Fun in Lab given on Page 17 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to make models of different types of topologies using marbles and used wire pieces / straws.

2. Introduction to MS Access 2010

Teaching Objectives

Students will learn about

- ☞ Concept of a database
- ☞ Types of databases
- ☞ Advantages of a database system
- ☞ Structure of a database
- ☞ MS Access 2010
- ☞ Components of MS Access 2010
- ☞ Data types in MS Access 2010
- ☞ Types of views in MS Access
- ☞ Rules for writing a field name in MS Access
- ☞ Creating a table

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that the computerized database system was introduced in 1960s.

Introduce:

- Database as organizing data in a manner which helps to store and retrieve a large amount of data efficiently.
- Database Management System as a collection of programs required to store and retrieve data from a database.

Explain to the students the meaning of the two types of databases – Flat File Database and Relational Database.

Share with the students the advantages of a database system.

Draw on board and explain the structure of a database to the students explaining about table, fields, records, primary key, query, report and form.

Introduce MS Access 2010 as a powerful and easy to use Relational Database Management System and is a part of MS Office Suite.

Demonstrate the steps to start MS Access 2010.

Familiarize the students with the various components of MS Access 2010 window covering Quick Access Toolbar, Title Bar, Ribbon, Navigation Pane, Navigation Buttons, Work Area and Objects Tabs.

Demonstrate to the students the two ways of creating a database as:

- Creating a blank database
- Creating a database using Templates

Show the students the method to open an existing database and close a database.

Explain different data types used in MS Access 2010 covering Text, Memo, Number, Auto Number, Date/Time, Yes/No, OLE, Hyperlink and Lookup Wizard.

Discuss with the students the use of the different types of views in MS Access 2010 as Datasheet view and Design view.

Share with the students the rules for defining field names in MS Access 2010.

Tell the students that Tables can be created in three ways.

Demonstrate to the students the steps to create a Table:

- In Design view
- In Datasheet view
- By using Templates

Show to the students the method to exit MS Access 2010.

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 database.

Q. What is Database Management System?

Q. Expand DBMS.

Q. Name the different types of databases.

Q. What type of database is MS Access 2010?

Q. Give any two advantages of Database System.

Q. Define Table / Query / Report / Form.

Q. Name any three data types used in MS Access 2010.

Q. What does OLE stands for?

Q. What are the rules for writing field names?

Q. What is the use of Field Name / Description in the Table design window?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 28, 29 and 30 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 30 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Fun in Lab given on pages 30 and 31 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create a table storing information about details of their ten friends and sort the records in the table in alphabetical order.

3. More on MS Access 2010

Teaching Objectives

Students will learn about

- ☞ Forms in MS Access
- ☞ Queries in MS Access
- ☞ Reports in MS Access

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that MS Access is used to create tables and maintain records in a database along with preparing Forms, Queries and Reports.

Introduce Forms as objects used to add, edit and display data from tables in a user friendly manner.

Share with the students that a Form can be displayed in three views – Form View, Design View and Layout View.

Demonstrate to the students the steps to create a Form.

Explain different types of Forms covering Multiple Items, Datasheet, Split Form and Modal Dialog.

Familiarize the students with the Navigation Bar of the Form window to view and navigate between records in a Table.

Tell the students that the appearance of the Form can be formatted using Design and Format tabs.

Introduce Query as the object that can give information which the user might not be able to find by looking at the Table directly.

Explain the different types of Queries as: Select Query, Parameter Query, Action Query, Crosstab Query and SQL.

Tell the students about the relationship between the Primary Key and the Foreign Key.

Show to the students the steps to define relationships between tables.

Demonstrate the steps to create a query.

Introduce Report as an object used to organize and present data in a user friendly format for printing purpose.

Demonstrate the steps to:

- Create a Report
- Print a Report

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 Form / Query / Report.

Q. Name the different views in which a Form can be displayed.

Q. Name the different types of Forms in MS Access.

Q. Where is Navigation Bar located?

Q. Name the different types of Queries.

Q. Define Primary Key / Foreign key.

Q. Name any four parameters of Query window.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 40 and 41 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Pages 41 and 42 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Fun in Lab given on Pages 42 and 43 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Using the Table created in the previous chapter create a query to display names of friends whose name starts with A or D.

4. More on Photoshop CS6

Teaching Objectives

Students will learn about

- ☞ Retouching tools
- ☞ Correction tools
- ☞ Working with Layers

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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

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

Demonstrate the use of Retouching Tools like:

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

Demonstrate the use of Correction Tools like:

- Blur Tool (used to blur parts of an image)

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

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.

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 Photoshop used for?

Q. What are Retouching Tools?

Q. Name some important retouching tools in Adobe Photoshop CS6.

Q. What is the use of Correction tools in Photoshop?

Q. Name the important correction tools of Photoshop.

Q. What are layers?

Q. What is the use of Layers in Photoshop?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 48, 49 and 50 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 50 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands-On and Fun in Lab given on Pages 50 and 51 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to arrange a scanned copy of their passport size photo and apply retouching and correction tools to beautify the image.

5. Lists and Tables in HTML

Teaching Objectives

Students will learn about

- ☞ Creating Lists
- ☞ Creating Tables

Number of Periods	
Theory	Practical
2	2

Teaching Plan

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

Introduce list as collection of related items.

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

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

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

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

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

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

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

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define List / Table.

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

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

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

Q. Name the attributes of <OL> tag.

Q. Name the tags used to create Definition List.

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

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

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 63, 64 and 65 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on page 65 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Fun in Lab given on pages 65 and 66 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create:

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

6. More on HTML

Teaching Objectives

Students will learn about

- ☞ Inserting Images
- ☞ Creating Marquee
- ☞ Linking Web Pages
- ☞ Frames

Number of Periods	
Theory	Practical
2	3

Teaching Plan

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Extension

Ask the students some oral questions based on this chapter.

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

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

Q. Which image formats are supported by HTML?

Q. What is the use of MARQUEE tag?

Q. Which tag is used to link web pages?

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

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 86 and 87 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on pages 87 and 88 of the main course book. Help the students to solve these questions.

In Creative Assignment, activity like Fun in Lab given on pages 88 and 89 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create an e-shopping web site listing categories of items on home page and details of items on separate category pages.

7. Latest Technological Development

Teaching Objectives

Students will learn about

- ☞ Artificial Intelligence
- ☞ 3D Printing
- ☞ Augmented Reality and Virtual Reality
- ☞ RPA (Robotic Process Automation)
- ☞ Internet of Things

Number of Periods	
Theory	Practical
2	1

Teaching Plan

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

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

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

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

Extension

Ask the students some oral questions based on this chapter.

Q. What is an Artificial Intelligence?

Q. What is an Augmented Reality?

Q. What is an Virtual Reality?

Q. What is an Internet of Things?

Q. What is an 3D Printing?

Q. What is an RPA?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 102, 103 and 104 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 104 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands-On and Fun in Lab given on Page 104 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to try any digital assistant like Alexa or Siri and ask "What is Virtual Reality?".

8. Loops and Functions in Python

Teaching Objectives

Students will learn about

- ☞ The FOR Statement + Jump Statements
- ☞ The WHILE Statement + Functions

Number of Periods	
Theory	Practical
2	3

Teaching Plan

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

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

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

a. FOR statement
   - using the range() statement

b. WHILE statement
   - infinite loop
   - while loop using else statement

c. JUMP statement
   - break statement
   - continue statement

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

Extension

Ask the students some oral questions based on this chapter.

Q. What are looping statement?

Q. What is the function of FOR statement?

Q. What is the function of WHILE statement?

Q. What is the function of JUMP statement?

Q. What is a FUNCTION?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 115, 116 and 117 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on 117 and 118 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Fun in Lab given on Page 118 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to make a list of series where you can apply the FOR and JUMP statements.

9. Artificial Intelligence

Teaching Objectives

Students will learn about

☞ The birth of Artificial Intelligence

☞ What is Artificial Intelligence?

- ☞ What can Artificial Intelligence do today?
- ☞ Implementing Artificial Intelligence
- ☞ Philosophers views on Artificial Intelligence

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that human brain has the ability for reasoning, problem solving and learning.

Make the students aware about the birth of the concept of artificial intelligence.

Explain the students in detail about the concept of artificial intelligence.

Share with the students the various fields in which artificial intelligence is being successfully implemented covering:

- Robotics vehicles
- Speech recognition
- Game playing
- Autonomous planning and scheduling
- Logistics planning
- Robotics
- Machine translation
- Machine vision
- Natural language processing
- Machine learning

Explain to the students the philosophers' views on artificial intelligence laying significance on:

- Weak AI Hypothesis
- Strong AI Hypothesis

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 AI?

Q. Who is the father of AI?

Q. Name some fields where AI is being implemented.

Q. What is Weak AI Hypothesis?

Q. What is Strong AI Hypothesis?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 125 and 126 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 126 of the main course

book. Help the students to solve these questions.

In Creative Assignment, activities like Hands-On and Fun in Lab given on Page 126 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

10. Robotics

Teaching Objectives

Students will learn about

- ☞ Robots and Robotics
- ☞ Androids
- ☞ Uses of Robotics
- ☞ Mechatronics

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that computers have made technological advancements into robotics industry.

Introduce the terms robots and robotics to the students.

Share with the students the various uses to which robotics can be put to.

Explain the different types of robots as industrial robots and service robots.

Tell the students about androids as robot designed to execute highly sophisticated instructions.

Introduce mechatronics as a new fields arising out of combination of mechanics and electronics.

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

Ask the students some oral questions based on this chapter.

Q. What is a robot?

Q. State two uses of robotics.

Q. What is mechatronics?

Q. What is robotics?

Q. Define android.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 132 and 133 of the main course book as One Touch Learn and Let's Do It. After solving the course book exercises, tell the students to solve Crack the Code activity given on Page 133 and 134 of the main course book. Help the students to solve these questions.

In Creative Assignment, activities like Hands-On and Fun in Lab given on Page 134 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.