4

TRACKPAD

Ver. 5.0

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	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.

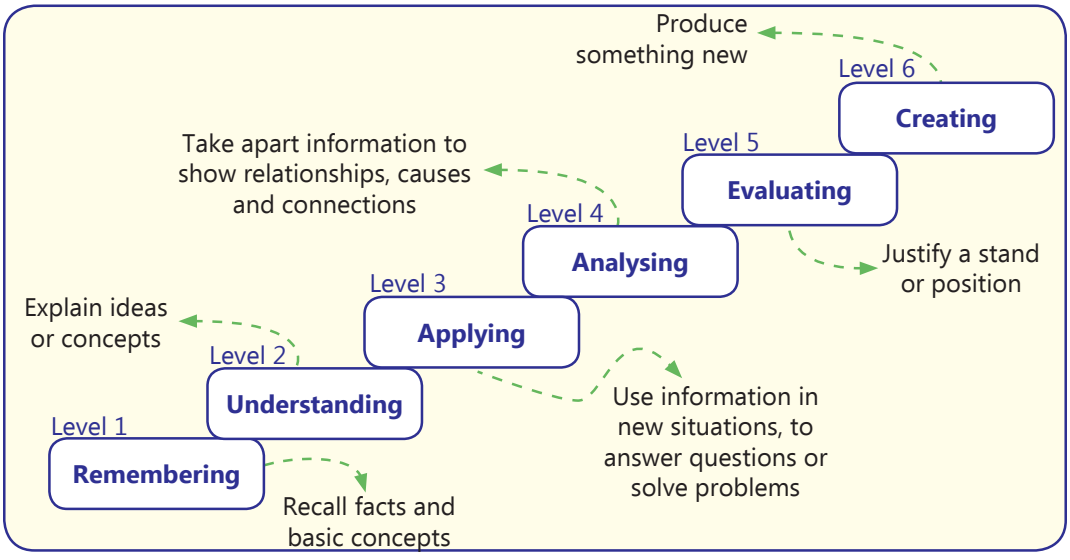
"Knowing yourself is the beginning of all wisdom."

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 4

LESSON PLAN

Trackpad Ver 5.0

1. Computer Memory

Teaching Objectives

Students will learn about

- ☞ Computer Memory
- ☞ Types of Computer Memory
- ☞ Online Storage Site (Cloud Storage)

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 7 to understand the recap of the topic.

While teaching this chapter, tell the students that like human beings, computers also have memory to store all data and instructions for performing various tasks.

Begin with description of various units of memory like byte.

Tell the students about the two types of computer memory – primary memory and secondary memory.

Make the students aware that the primary memory of the computer is fixed on the motherboard of the computer.

Explain in detail about the types of Primary Memory covering:

- Random Access Memory (RAM) – the volatile memory
- Read Only Memory (ROM) – the non-volatile memory

Let the students know the meaning and difference between the two types of RAM – Dynamic RAM and Static RAM.

Give a brief introduction about secondary memory or secondary storage devices covering in detail:

- Magnetic Disk (Hard Disk – Internal and External)
- Optical Disk (CD, DVD, Blue-ray Disk – ROM, R and RW)
- Flash Drive (Pen Drive, Memory Card)

Brief the students about online storage, i.e. cloud storage.

Ask the students to solve the exercise **I Know** given on page number 10.

Ask the students to solve the exercise **Quiz Bee** given on page number 11.

Extension

Ask the students some oral questions based on this chapter.

Q. What is computer memory?

Q. How is memory measured in a computer?

Q. What is primary memory?

Q. Name the different types of primary memory.

Q. Expand RAM / ROM.

Q. What are the different types of RAM?

Q. What is the difference between primary and secondary memory?

Q. Name the categories in which secondary storage devices are divided into.

Q. What are the different types of CDs and DVDs?

Q. Expand CD / DVD.

Q. What is a pen drive / memory card?

Q. Define a byte.

Q. Write a note on online storage.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 12 and 13 in the main course book in the form of Assess Yourself. Tell them to solve the interdisciplinary and computational skills developing exercise as Coding Zone given on page 14.

Take the students to the computer lab and let them practise the activity given in the Lab Activity and Fun Activity section on pages 13 and 14 in the main course book. This will enhance the ability of the students and serve as a creative, critical thinking, information and technology literacy activity.

Ask the students to carry out the Group Discussion session given on page 13 in the class only to enhance social interaction and communication skills.

Ask the students to carry out the Group Discussion session given on page 13 in the class only to enhance social interaction and communication skills.

Suggested Activity

Ask the students to research and collect information about some secondary storage devices like floppy disks, which have now become obsolete.

2. The Computer Timeline

Teaching Objectives

Students will learn about

- ☞ Evolution of Computers
- ☞ Generations of Computers
- ☞ Features of Computers
- ☞ Limitations of Computers

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 15 to understand the recap of the topic.

While teaching this chapter, tell the students that the computer is an outcome of labour of a number of minds.

Tell the students about the early counting tools like knots tied on a rope, marks carved in clay, fingers, pebbles, etc.

Explain to the students about invention of Abacus – the first calculating device.

Share with the students the importance and usefulness of Abacus even today and that it is being taught in schools today also.

Give a brief account of these calculating machines:

- Napier's Bones
- Pascaline Calculator
- Difference Engine
- Analytical Engine

Tell the students about Charles Babbage, the father of computers, and his invention of Difference Engine which was later improved by him into Analytical Engine, the first working model of a mechanical computer.

Explain to the students about the concept of generations of computers and need for classification on this basis.

Share with the students the characteristic features of the different generations of computers covering:

- First Generation (1940s) – MARK-I, ENIAC, UNIVAC
- Second Generation (1950s)
- Third Generation (1960s)

- Fourth Generation (1970s)
- Fifth Generation (Present)

Make the students understand the basic features of a computer that make it a special machine covering:

- Speed
- Accuracy
- Diligence
- Storage Capacity
- Versatility

Share the limitations of computer with the students.

Ask the students to solve the exercise **I Know** given on page number 17.

Ask the students to solve the exercise **Quiz Bee** given on page number 19.

Extension

Ask the students some oral questions based on this chapter.

Q. Name some early counting tools.

Q. What is Abacus?

Q. Which is the first mechanical calculator?

Q. Which is the first mechanical computer?

Q. Who is called the Father of Computers?

Q. How many generations of computers are there?

Q. What was the technology used in First / Second / Third / Fourth / Fifth generation of computers?

Q. Give three characteristic features of First / Second / Third / Fourth / Fifth generation of computers.

Q. What are limitations of computers?

Ask the students to try Video based question given on page 22 in the computer lab to enhance media literacy skills.

Evaluation

After explaining the chapter, let the students do the exercises given on page 20 and 21 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 23.

Take the students to the computer lab and let them practise the activity given in the Fun Activity and Lab Activity section on page 22 in the main course book. This will enhance the ability of the students and serve as a critical thinking, information and technology literacy activity.

Ask the students to try Video based question given on page 22 in the computer lab to enhance media literacy skills.

Suggested Activity

Ask the students to prepare a collage of different models of computers depicting its evolution over the generations.

3. Managing Files and Folders

Teaching Objectives

Students will learn about

- ☞ Windows 11 Operating System
- ☞ Managing Files and Folders

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 24 to understand the recap of the topic.

Introduce file as an item that contains a collection of related information, a folder as a collection of files and a sub folder as a folder within a folder.

Introduce to the students the Windows Explorer as a file manager that manages files and folders.

Demonstrate to the students the steps to open Windows Explorer.

Familiarize the students with the various components of Windows Explorer covering:

- Toolbar
- Navigation pane
- File List pane
- Status bar
- Address bar
- Search
- Back and Forward.

Tell the students that Windows 11 has some default folders to organize similar files.

Demonstrate to the students the steps to:

- Open a file and a folder
- Select a file and a folder (including selecting a single file, selecting multiple files, selecting all files and deselecting a file)

- Copying a file and a folder (using Copy-Paste features)
- Moving a file and a folder (using Cut-Paste features)
- Creating a new file and a folder
- Renaming a file and a folder
- Deleting a file and a folder
- Restoring a file and a folder

Ask the students to solve the exercise **I Know** given on page number 26.

Ask the students to solve the exercise **Quiz Bee** given on page number 27.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a file / folder / subfolder?

Q. Define a computer icon.

Q. What is Windows Explorer?

Q. Name the default folders of Windows 11 for organizing data.

Q. Which key is used to select multiple files?

Q. Which key is pressed to invert the selection?

Q. What is the difference between copying a file and moving a file?

Q. What is Sneak feature of Windows 11?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 30, 31 and 32 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 32.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 32 in the main course book. This will enhance the ability of the students and serve as a an interdisciplinary activity.

Ask the students to try Self Reflection session given on page 29 so as to highlight elements like responsibility on part of the students.

Suggested Activity

Ask the students to collect information about some more features of Windows 11 other than those discussed in the chapter.

4. Images and Objects in Word 2021

Teaching Objectives

Students will learn about

- ☞ Inserting a Picture
- ☞ Wrapping Text Around a Picture
- ☞ Inserting WordArt
- ☞ Working with Shapes

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 34 to understand the recap of the topic.

While teaching this chapter, tell the students that although MS Word is a word processor, yet it allows three types of graphics to work upon – Shapes, WordArt and Pictures.

Familiarize the students with various categories of Shapes under Illustrations group of Home tab explaining use of Lines, Basic Shapes, Flowchart, Stars and Banners and Callouts.

Demonstrate to the students the steps involved in the process of:

- drawing a shape
- adding text to the shape

Tell the students the various types of modifications that can be done on the inserted shape – changing outline colour, changing fill colour, adding shape effects like 3-D rotation and bevel.

Introduce WordArt as application to create text effects which are not possible through text formatting.

Demonstrate to the students the steps to:

- insert WordArt in a document
- insert Pictures

Ask the students to solve the exercise **Quiz Bee** given on page number 37.

Ask the students to solve the exercise **I Know** given on page number 38.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Word 2021?

Q. What does Word 2021 allow us to do?

Q. What does wrapping text refer to?

Q. What can we do with the help of WordArt in Word 2021

Q. What does Word 2021 allow us to do to enrich the look of our document?

Q. Name any three categories of Shapes in Word 2021.

Q. What do you mean by formatting a shape?

Q. What does Add Text option do?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 39 and 40 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 41.

Take the students to the computer lab and let them practise the activity given in the Lab Activity and Fun Activity section on pages 40 and 41 in the main course book. This will enhance the ability of the students and serve as a creativity, interdisciplinary and technology literacy activity.

Suggested Activity

Ask the students to write a paragraph in in Word 2021 on 'Festivals of India'. The paragraph must be supported with relevant pictures.

5. Creating Tables in Word 2021

Teaching Objectives

Students will learn about

- What is a Table?
- Entering Data in a Table
- Selecting Different Parts of a Table
- Deleting a Row/Column in a Table
- Splitting Cells in a Table
- Changing the Text Alignment
- Inserting a Table
- Moving in a Table
- Inserting a Row/Column in a Table
- Merging Cells in a Table
- Applying Borders and Shading

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 42 to understand the recap of the topic.

While teaching this chapter, tell the students that a table is an arrangement of text in the form of columns and rows.

Also tell them that an intersection of a row and a column is called a cell.

Demonstrate to the students the method of inserting a table in a Word document.

Show to the students how to select a cell, a group of cells, a row, a column or the whole table.

Demonstrate to the students the steps to:

- add more rows to a table
- add more columns to a table
- change width of a column
- delete rows from a table
- delete columns from a table

Introduce merging of cells as combining two or more cells in the same row or the same column into a single cell.

Show to the students the steps to merge two or more cells. Introduce splitting of cells as dividing one cell into two or more cells. Show to the students the steps to split a cell.

Demonstrate to the students the steps to move a table and resize a table.

Tell the students that Word 2021 allows to apply borders to tables and cells as well as to shade the cells and table.

Let the students know how to change the text alignment in a table.

Ask the students to solve the exercise **I Know** given on page number 48.

Ask the students to solve the exercise **Quiz Bee** given on page number 48.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a table?

Q. Define a cell.

Q. Which key helps us move to a cell on the left in a table?

Q. Can more rows or columns be added to a table?

Q. Define merging / splitting of cells.

Q. What is the difference between moving a table and resizing a table?

Q. What is the use of Borders and Shading Styles feature of Word 2021?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 50 and 51 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 52.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 52 in the main course book. This will enhance the ability of the students and serve as an interdisciplinary and technology literacy activity.

Ask the students to try Self Reflection session given on page 49 to highlight elements like flexibility on part of the students, and Video based question given on page 52 in the computer lab to enhance media literacy skills.

Also ask the students to carry out the Group Discussion session given on page 52 in the class only to enhance social interaction and communication skills.

Suggested Activity

Ask the students to create a comparative marksheet for your marks in different subjects for last three classes.

6. Introduction to PowerPoint 2021

Teaching Objectives

Students will learn about

- ☞ Starting PowerPoint 2021
- ☞ Creating a New Presentation
- ☞ Saving a Presentation
- ☞ Exiting PowerPoint 2021
- ☞ Components of PowerPoint 2021 Window
- ☞ Viewing a Presentation
- ☞ Opening an Existing Presentation

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 56 to understand the recap of the topic.

While teaching this chapter, tell the students that PowerPoint 2021 is a part of Microsoft Office 2021 package or suite.

Share with the students that it is used to create presentations.

Demonstrate to the students the steps to start PowerPoint 2021.

Familiarize the students with various components of PowerPoint screen covering Title Bar, Ribbon, Quick Access Toolbar, View Buttons, Slide, Placeholder, Slides Pane and Status Bar.

Introduce slide as a single page of a presentation.

Demonstrate the steps to:

- create a new presentation
- enter data on a slide in title and subtitle placeholders
- add new slide to a presentation
- deleting a placeholder
- deleting a slide

Introduce slide show as full screen view of the presentation.

Show to the students the method of viewing a slide show.

Tell the students how to:

- save a presentation
- exit PowerPoint 2021

Ask the students to solve the exercise **I Know** given on page number 59.

Ask the students to solve the exercise **Quiz Bee** given on page number 59.

Extension

Ask the students some oral questions based on this chapter.

Q. What is PowerPoint 2021?

Q. Define Title Bar / Status Bar.

Q. What do you mean by Ribbon / Placeholder?

Q. What is a slide in a presentation?

Q. How can a slide be added to the presentation?

Q. What are the various ways in which a slide show can be started?

Q. What are the steps to exit PowerPoint 2021?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 63 and 64 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 65.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 65 in the main course book. This will enhance the ability of the students and serve as an interdisciplinary and technology literacy activity.

Suggested Activity

Ask the students to create a presentation on 'The Cartoon Character I Like The Most'.

7. More on PowerPoint 2021

Teaching Objectives

Students will learn about

- ☞ Adding Themes to a Presentation
- ☞ Slide Layout
- ☞ PowerPoint Views

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 67 to understand the recap of the topic.

Let the students know that PowerPoint provides attractive and colourful designs as themes that can be added to our slides.

Explain to the students that PowerPoint is a program that allows creating interesting and exciting presentations.

Introduce slide layout as arrangement of text, image, WordArt, Charts, etc. on a particular slide.

Share with the students the names of some commonly used slide layout options.

Demonstrate to the students the steps involved in changing the slide layout.

Show to the students that the steps involved in Word and PowerPoint are almost similar.

Explain to the students the names of different types of slide views in PowerPoint covering:

- Normal View
- Outline View
- Slide Sorter View
- Reading View

Ask the students to solve the exercise **Quiz Bee** given on page number 71.

Ask the students to solve the exercise **I Know** given on page number 70.

Extension

Ask the students some oral questions based on this chapter.

Q. What does PowerPoint 2021 provide to be added to our slides as themes?

Q. How can themes be added to a presentation in PowerPoint 2021?

Q. Define slide layout.

Q. What is the default view of presentations in PowerPoint 2021?

Q. Define:

   a. Normal View

   b. Outline View

   c. Slide Sorter View

   d. Reading View

Q. What is Notes Pane view of PowerPoint 2021 used for?

Q. What does Outline view of PowerPoint 2021 display?

Q. What are the features of Outline view of PowerPoint 2021?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 72 and 73 in the main course book in the form of Assess Yourself.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 73 in the main course book. This will enhance the ability of the students and serve as a an interdisciplinary and technology literacy.

Ask the students to try Self Reflection session given on page 71 to highlight elements like initiative and communication on part of the students, and Video based question given on page 73 in the computer lab to enhance media literacy skills.

Suggested Activity

Create a PowerPoint presentation on the topic "Are we conserving natural resources?". Use pictures to increase the effectiveness of the presentation.

8. More on Internet

Teaching Objectives

Students will learn about

- ☞ Internet
- ☞ Commonly used Internet Terms
- ☞ Microsoft Edge
- ☞ Displaying a Specific Web Page/Website
- ☞ Online Safety

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 95 to understand the recap of the topic.

While teaching this chapter, make the students recall the previous learning and explain the brief history of Internet.

Tell the students about the advantages and disadvantages of Internet.

Make the students aware of the basic common Internet terms:

- World Wide Web
- Web Page
- Website
- URL
- Web Browser
- Hyperlink

Show the students the steps involved in using the search engines.

Let the students know about the Microsoft Edge and parts of Edge.

Explain to the students how to display a web page of website in proper way.

Share the details about Online Safety with the students. Some of the Online safety tips are as follows:

- Choose strong passwords
- Never save password
- Open trusted emails only
- Always use antivirus programs
- Do not share your personal information on Internet

Ask the students to solve the exercise **Quiz Bee** given on page number 79.

Ask the students to solve the exercise **I Know** given on page number 77.

Extension

Ask the students some oral questions based on this chapter.

Q. How can a network be defined?

Q. What is Internet?

Q. What are the advantages of Internet?

Q. How is Internet disadvantageous?

Q. Define the following:

- World Wide Web
- Web Page
- Website
- URL
- Web Browser
- Hyperlink

Q. What is Microsoft Edge?

Q. Name some components of Microsoft Edge window.

Q. How can a specific web page/website be displayed?

Q. What is Online safety?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 81 and 82 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 83.

Take the students to the computer lab and let them practise the activity given in the Lab Activity and Fun Activity section on pages 82 and 83 in the main course book. This will enhance the ability of the students and serve as a an art integration, technology literacy and critical thinking activity.

Ask the students to try Self Reflection session given on page 80 to highlight elements like initiative and communication on part of the students.

Suggested Activity

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

9. Blocks in Scratch

Teaching Objectives

Students will learn about

- ☞ Motion Block
- ☞ Looks Block
- ☞ Control Block
- ☞ Events Block
- ☞ Sound Block
- ☞ Operators Block

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 85 to understand the recap of the topic.

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
- Events blocks
- Looks blocks
- Sound blocks
- Control blocks
- Operators blocks

Make the students aware of how arithmetic operators function.

Let the students know that comparison/relational operators present in Scratch allow us to compare the relationship between two values or variables.

Explain to the students that logical operators are used to combine two or more more conditions.

Ask the students to solve the exercise **Quiz Bee** given on page number 90.

Ask the students to solve the exercise **I Know** given on page number 89.

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. Define events block.

Q. What is looks block?

Q. What is sound block?

Q. What is control block?

Q. Define operators block.

Q. What is the colour of the operators block?

Q. What are arithmetic operators?

Q. What are comparison/relational operators?

Q. What are logical operators?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 93 and 94 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 95.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 95 in the main course book. This will enhance the ability of the students and serve as a technology literacy activity.

Suggested Activity

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

10. Drawing Shapes in Scratch

Teaching Objectives

Students will learn about

- ☞ Drawing Shapes
- ☞ Controlling a Sprite
- ☞ Working with Two Sprites

Number of Periods	
Theory	Practical
2	3

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 96 to understand the recap of the topic.

Tell the students about pen block and explain its use by using appropriate examples. Also, show the steps involved in creating programs using pen blocks.

Show them the functions of pen block:

Blocks	Functions
pen down	It places the pen in the down position.
pen up	It disables drawing operations by lifting the pen.
set pen color to	It specifies the colour to be used while drawing.
Change pen color by 10	It modifies the colour of a line.
Change pen by 1	It modifies the thickness of the pen. You can also change the thickness by writing the desired number in the number box, number 1 being the least thick.
stamp	It draws or stamps the image of a sprite onto the stage.
erase all	It erases the pen marks from the stage.

Show the steps involved in drawing a line in Scratch.

Explain the steps involved in drawing a square in Scratch.

Tell them the steps to control the movement of the sprite:

Polygon	Command
Triangle 	Repeat 3 Move 100 Steps Turn 120 degrees
Square 	Repeat 4 Move 100 Steps Turn 90 degrees
Pentagon 	Repeat 5 Move 100 Steps Turn 72 degrees
Hexagon 	Repeat 6 Move 100 Steps Turn 60 degrees
Heptagon 	Repeat 7 Move 100 Steps Turn 51 degrees
Octagon 	Repeat 8 Move 100 Steps Turn 45 degrees
Nonagon 	Repeat 9 Move 100 Steps Turn 40 degrees
Decagon 	Repeat 10 Move 100 Steps Turn 36 degrees

Let the students know about Repeat block, Forever block, and Wait block.

Also make the students aware of working with two sprites in Scratch.

Ask the students to solve the exercise **Quiz Bee** given on page number 99.

Ask the students to solve the exercise **I Know** given on page number 101.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a pen block?

Q. How can you draw a line in Scratch?

Q. How can you draw a square in Scratch?

Q. For what is Repeat block used in Scratch?

Q. What must we remember to draw polygons in Scratch?

Q. Define Forever block.

Q. What is the function of the Wait block?

Q. Where is Jordyn sprite present in Scratch?

Q. In which category is Dragon sprite found in Scratch?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 102 and 103 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 104.

Take the students to the computer lab and let them practise the activity given in the Lab Activity section on page 104 in the main course book. This will enhance the ability of the students and serve as a technology literacy activity.

Suggested Activity

Ask the students to draw a triangle and circle together in a program.

11. Categories of Robots

Teaching Objectives

Students will learn about

- ☞ Robots
- ☞ Categories of Robots

Number of Periods	
Theory	Practical
1	0

Teaching Plan

Before starting the chapter, ask the students to read the comic given on page 105 to understand the recap of the topic.

Brief the students about Robots in detail.

Tell the students about the categories of robots which are as follows:

- Pre-programmed Robots
- Autonomous Robots
- Tele Operated Robots
- Augmenting Robots
- Humanoid Robots

Share examples of each type of robot with their:

- Function
- Purpose
- Use

Extension

Ask the students some oral questions based on this chapter.

Q. What is a robot?

Q. What are the categories of robots?

Q. Define the following:

   a. Pre-programmed Robots

   b. Autonomous Robots

   c. Tele Operated Robots

   d. Augmenting Robots

   e. Humanoid Robots

Q. Name two preprogrammed robots.

Q. Name two autonomous robots.

Q. Name two tele-operated robots.

Q. What is Sophia?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 109 and 110 in the main course book in the form of Assess Yourself. Tell them to solve the computational skill developing exercise as Coding Zone given on page 111.

Take the students to the computer lab and let them practise the activity given in the Lab Activity and Fun Activity section on page 111 in the main course book. This will enhance the ability of the students and serve as a creativity and technology literacy activity.

Ask the students to carry out the Group Discussion session given on page 110 in the class only to enhance social interaction and communication skills.

Suggested Activity

Ask the students to research about more types of robots.