



Codju Curriculum

GRADE - 1

CHAPTER 1: COMPUTER - A WONDERFUL MACHINE

Topics	Learning Outcomes
• What are Machines? • What is a Computer? • Types of Computers	• The students will learn about machines and different types of machines. • They will gain insight about why computer is known to be as Wonderful machine. • They will learn about main types of computers.

CHAPTER 2: USES OF COMPUTER

Topics	Learning Outcomes
• Features of a Computer • Uses of a Computer • Where are Computers used?	• The students will about the different features and limitations of computers. • They will learn about the uses of computers in daily life. For example, in hospitals, offices, schools, etc.

CHAPTER 3: EXPLORE YOUR COMPUTER

Topics	Learning Outcomes
• Parts of a Computer • Operating a Computer	• They will learn about different parts of computer, such as the Monitor, CPU, Keyboard, Mouse, etc. • They will know how computers actually work. • They will get to know how to turn on and how to work on computers.

CHAPTER 4: KEYBOARD & TYPING

Topics	Learning Outcomes
• Typing • Keys on the Keyboard • Learn to Type	• In this chapter, students will learn how they can type. • They will know more about the use of different keys in typing through the keyboard.

CHAPTER 5: MOUSE & ITS USES

Topics	Learning Outcomes
• Parts of mouse • Using the mouse	• The students will learn about the mouse. • They will know about the different clicks and scroll functions of the mouse. • The students will learn about the use of buttons on the mouse.

CHAPTER 6: INTRODUCTION TO TUX PAINT

Topics	Learning Outcomes
- Starting Tux Paint - Explore Tux Paint - Tux Paint Tools	- The students will learn to download and start with Tux Paint - They will learn about the components of Tux Paint - They will also learn about the different tools used to paint in Tux Paint, like Shapes, Brush, Erase, Lines, etc.

CHAPTER 7: INTRODUCTION TO CODING

Topics	Learning Outcomes
- What is Coding? - What is an Algorithm? - Block-based Coding	- Here, students will learn about algorithms and how they apply to coding. - They will know that the algorithm is a process that is used in everyday life as well.

CHAPTER 8: INTRODUCTION TO SCRATCHJR

Topics	Learning Outcomes
- What is ScratchJr? - Start ScratchJr - Explore ScratchJr	- The students will learn to create their own imaginary games, stories and animations using ScratchJr - They will explore various components of ScratchJr to bring their ideas into reality.

ARTIFICIAL INTELLIGENCE

GRADE - 2

CHAPTER 1: COMPUTER: TYPES AND PARTS

Topics	Learning Outcomes
• Computer: A Wonderful Machine • Types of Computers • Parts of a Computer	• The students will learn that a computer is a machine which is capable of running multiple programs simultaneously. • They will gain insight into the various parts of a computer, including the CPU, monitor, keyboard, mouse, and many more.

CHAPTER 2: OPERATING A COMPUTER

Topics	Learning Outcomes
• How Computers Work? • Operating a Computer • Using a Computer Safely	• The students will gain knowledge of starting the computer and operating it. • They will learn to handle it gently and carefully. • They will understand the importance of keeping it clean for better and smoother performance.

CHAPTER 3: WORKING OF A COMPUTER

Topics	Learning Outcomes
• Working of a Computer (IPO) • IPO Cycle in Computers and IPO Devices	• The students will learn about the working process of computer. • They will understand that every action on computer follows a specific sequence just like daily life tasks. • They will also explore various devices that facilitate computer working such as keyboard, CPU, monitor, etc.

CHAPTER 4: MOUSE AND KEYBOARD

Topics	Learning Outcomes
• Parts of a Mouse • How to use a Mouse? • Types of Mouse • Keys on Keyboard	• Here, the students will learn how mouse and keyboard works. • They will understand how to use mouse buttons to perform actions like open, close, drag, drop, etc. • They will also enhance their knowledge about different keys like Alphabet keys, Number Keys, Special Keys.

CHAPTER 5: DRAWING WITH TUX PAINT

Topics	Learning Outcomes
• Tux Paint: Components • Starting Tux Paint • Drawing Tools	• The students gain insight into the purpose of Tux Paint and how to start it. • They will develop a deeper knowledge about the components of Tux Paint that includes Toolbar, Drawing Canvas, Selector, Color Palette, etc.

CHAPTER 6: LET'S MEET MS PAINT

Topics	Learning Outcomes
• Introduction to MS Paint • MS Paint: Parts • Create and Save your Drawing • MS Paint: Tools	• The students will learn to open MS Paint using search by name option in Windows. • They will gain deeper understanding about the interface of MS Paint that includes Top Menu Bar, Ribbon, Color Palette, and Drawing Area. • They will improve their skills by exploring various tools like pencil, eraser, brush, shapes, fill with color, text, etc.

CHAPTER 7: INTRODUCTION TO CODING

Topics	Learning Outcomes
• What is an Algorithm? • What is Coding? • Block based coding • Debugging your code	• The students will learn that Algorithm is a step-by-step process needed to complete any task, just like with computers. • They will understand that coding involves giving specific instructions to computer to accomplish a particular task. • They will get deeper insights into the concept how a computer executes a block of code to achieve better results.

CHAPTER 8: MORE ABOUT SCRATCHJR

Topics	Learning Outcomes
• Explore ScratchJr • Block Categories • Animations in ScratchJr	• In this chapter, the students will get a better understanding of the components of ScratchJr that includes stage, background, sprite, coding area, etc. • They will also learn about different blocks. For example, Trigger, Motion, Sound, Looks and many more. • The students will enhance their skills and expand their knowledge while playing with the blocks.

ARTIFICIAL INTELLIGENCE

GRADE - 3

CHAPTER 1: COMPUTER SYSTEM

Topics	Learning Outcomes
• What is a Computer ? • Computer System • Computer Hardware • Computer Software • Working of a Computer	• Students will learn what a computer is, including its components and how hardware and software work together to perform tasks. • Students will gain insight into the computer's input, process, and output cycle.

CHAPTER 2: INTRODUCTION TO WINDOWS 10

Topics	Learning Outcomes
• Operating System • Windows 10 • Starting Windows • Windows 10 Components • Working with Programs	• Students will identify key elements of the Windows 10 interface. • Students will learn how to start, switch between, resize, and close programs, as well as the importance of saving work.

INTRODUCTION TO THE INTERNET

CHAPTER 3: ART IN MS PAINT

Topics	Learning Outcomes
• Starting MS Paint • Components in MS Paint • Shapes & Objects • Tools in MS Paint	• Students will understand how to use various tools in MS Paint. • Students will explore the use of color and text in MS Paint to create visually appealing art projects,

CHAPTER 4: INTRODUCTION TO MS WORD

Topics	Learning Outcomes
• Starting MS Word • Components of MS Word • Basics of MS Word • Entering Text in a Document	• Students will learn how to create, save, edit, print, and exit Word documents. • Students will practice entering, formatting, and managing text using features like Word Wrap and basic text editing tools.

CHAPTER 5: EDITING AND FORMATTING TEXT IN MS WORD

Topics	Learning Outcomes
• Opening a Document • Editing text • Formatting text	• Students will learn how to open, copy, paste, edit, select, move, and delete the text • They will learn how to apply formatting effects • They will also become familiar with useful keyboard shortcuts

CHAPTER 6: CODING CONCEPTS

Topics	Learning Outcomes
• Blocks and Sequence • Repeat (Loops) • Debugging	• Students will learn a sequence in coding by using blocks in a specific order to achieve desired outcomes. • Students will recognize how loops can simplify repetitive tasks • Students will also understand the concept of debugging

CHAPTER 7: INTRODUCTION TO SCRATCH

Topics	Learning Outcomes
• What is Scratch? • Scratch Interface • Components of Scratch Interface • Using Scratch	• Students will understand the basics of Scratch and its uses • They will identifying key components like sprites, stage, and coding area. • They will also learn to create, customize and save projects.

CHAPTER 8: CREATING ANIMATIONS IN SCRATCH

Topics	Learning Outcomes
• Blocks in Scratch • Creating Animations in Scratch • Drawing Shapes in Scratch	• Here, students will be able to open and manage Scratch files. • Now they will learn to use different block categories, including motion, looks, sound, etc. • The students will also learn about pen extension to create shapes and patterns.

AI & HUMAN INTELLIGENCE

GRADE - 4

CHAPTER 1: INSIDE THE COMPUTER

Topics	Learning Outcomes
- Parts of the Computer System - What is the System Unit? - Inside the System Unit	- Students will learn the key components of System Unit. - They will distinguish between primary and secondary memory. - They will be able to describe the purpose of external storage devices.

CHAPTER 2: WINDOWS OPERATING SYSTEM

Topics	Learning Outcomes
- Operating System - Windows 10 - Windows Desktop - Using the Desktop	- Students will learn the functions of an operating system. - They will be able to organize desktop icons by sorting, arranging, and using folders to keep the workspace tidy. - They will also create, save, and organize files and folders on the desktop.

USES OF INTERNET

CHAPTER 3: FUN WITH PAINT 3D

Topics	Learning Outcomes
2D & 3D Shapes - Starting Paint 3D - Paint 3D Interface - Adding 3D Objects - Modifying Objects - More in Paint 3D	- The students will learn about key components like menu bar, ribbon, color palette, etc. - They will learn to draw, select, manage shapes and objects. - They will master the tools brush, color picker, fill with color, text tool, etc.

CHAPTER 4: MORE ON FORMATTING IN MS WORD

Topics	Learning Outcomes
- Starting MS Word - Entering text in a Document - Selecting text in a Document - Formatting the text	- Students will learn basic formatting options in Word 2019. - They will also learn about the advanced text formatting features and visual elements, like subscript, superscript, line spacing, page border, shading, etc.

CHAPTER 5: USING OBJECTS IN WORD

Topics	Learning Outcomes
- Shapes - Creating a Text Box - WordArt - Inserting Pictures - Inserting Special Symbols	- Students will learn to create and customize shapes. - They will learn to add text boxes and WordArt to creatively format text. - They will also learn to insert and format pictures.

CHAPTER 6: INTRODUCTION TO MS POWERPOINT

Topics	Learning Outcomes
• Uses of PowerPoint • Starting PowerPoint 2019 • Components of the PowerPoint Window • Basics of MS PowerPoint • Slide Show View	• Students will understand the use of PowerPoint presentation in personal, professional and education line. • They will identify the key components like toolbar, slide/outline pane, title-bar, etc. • They will also be able to manage slides.

CHAPTER 7: MODIFYING SLIDES IN MS POWERPOINT

Topics	Learning Outcomes
• Slide Layouts • Formatting the Text • Working with WordArt • Inserting a Picture • Inserting a Text Box	• Resizing Objects • Rearranging Slides in Slide Sorter View • Deleting a Slide
	• Students will learn to modify slides. • They will learn to use slide layout and add WordArt to create appealing presentations. • They will enhance their skills in inserting and managing objects.

CHAPTER 8: CODING CONCEPTS: DATA TYPES, VARIABLES & OPERATORS

Topics	Learning Outcomes
• What is Data? • Data Types • Variables • Operators • Coding with Variables & Operators	• Students will learn about data and data types. • They will know how to assign and update variable value. • Here, students will be able to create simple code to perform calculations.

CHAPTER 9: WORKING WITH DATA IN SCRATCH

Topics	Learning Outcomes
• Variables • Operators • Working with Inputs • Setting the Sprite Position	• Students will learn how to set, update, and display variable within their Scratch code. • They will learn to apply operators in different scenarios. • They will learn to set and manipulate the position of sprite. • Students are now ready to create complex Scratch projects, like stories, animation, games, etc.

CHAPTER 10: CREATING STORIES IN SCRATCH

Topics	Learning Outcomes
• Stories in Scratch	• Students will learn to create interactive stories using sensing blocks. • They will apply operators to perform calculations.

AI DOMAINS & TOOLS

GRADE - 5

CHAPTER 1: EXPLORING COMPUTER SOFTWARE

Topics	Learning Outcomes
• What is Software? • Why is Software needed? • Types of Software • How Software Works? • How Computers understand Software?	• Students will learn about System software and Application software. • They will get to know how software works, including how it interacts with hardware. • They will also learn how IPO mechanism works.

CHAPTER 2: INTERNET, EMAIL AND DIGITAL SAFETY

Topics	Learning Outcomes
• Decoding the Web Browser • Introduction to Email • Using Email • Digital Safety	• Students will grasp the fundamental concepts to effectively navigate the web browsers and emails. • They will learn to compose professional and polite emails. • They learn the importance passwords and safety of online information.

CHAPTER 3: TABLES IN MS WORD

Topics		Learning Outcomes
• Creating a Table • Entering data in a Table • Selecting components of a Table • Inserting a Row or Column	• Deleting a Row or Column • Deleting a Table • Merging and Splitting Cells • Formatting a Table	• In this chapter, the students will learn to create and manage tables. • They will learn to adjust and merge cells. • The students will also learn about the different parts of table.

CHAPTER 4: MORE FEATURES OF MS WORD

Topics		Learning Outcomes
• Finding and Replacing text • Spelling and Grammar • Format Painter • Page Formatting	• Setting Page Properties • Inserting a Screenshot • Applying Styles	• Here, students will learn to find and replace text within a Word document. • They will learn to adjust margins and settings of pages. • They will also learn to format and style pages.

CHAPTER 5: ADDING GRAPHICS IN MS POWERPOINT

Topics		Learning Outcomes
• Creating a Presentation • Changing the Background • Using Shapes • Copying Objects	• Inserting Videos • Animation Effects • Transition Effects	• Students will learn to create visually appealing presentations. • They will learn to apply animation effects to objects. • Students will enhance skills in copying objects, inserting videos, and exploring different transition effects.

CHAPTER 6: MASTERING MS POWERPOINT

Topics	Learning Outcomes
• Creating a Presentation • Applying Themes • Inserting SmartArt • Working with Tables • Working with Charts	• Students will learn to apply pre-designed themes to their presentations. • Students will be able to create and format SmartArt diagrams, tables, and charts.

CHAPTER 7: CONTROL STRUCTURES IN CODING

Topics	Learning Outcomes
• Control Structures • Sequences • Conditionals • Loops • Nested Control Structures	• Students will learn the usage and purpose of control structures • They will understand how to use different loops and conditionals to solve problems • They will learn to apply nested control structures to create complex algorithms.

CHAPTER 8: CONTROL STRUCTURES IN SCRATCH

Topics	Learning Outcomes
• Adding Sprite and Background • Control Blocks in Scratch • Conditionals in Scratch • Loops in Scratch • Changing the Costume of a Sprite	• Students will learn to use control blocks. • They will learn to apply if and if else to make decisions. • They will now be able to change the costume of a sprite and use loops to create simple animations.

CHAPTER 9: BUILDING GAMES IN SCRATCH

Topics		Learning Outcomes
• About the Game • Adding Sprite • Making the Sprite move • Making the Sprite move on Touch	• Hiding and Showing the Sprite • Adding a Scoring System	• Here, students will be able to make sprite move in response to user's input. • Students will be experts in using conditionals and loops to create interactive elements.

HOW AI WORKS?

GRADE - 6

CHAPTER 1: COMPUTER LANGUAGES & TYPES

Topics	Learning Outcomes
• Programming Language • How Computer Runs Code? • Classification of Programming Languages • Different Generations of Programming Languages	• Students will learn the basic concept and role of programming language • They will learn about the high-level and low-level programming language • They will learn to translate high-level code to machine code.

FIELDS OF ARTIFICIAL INTELLIGENCE

CHAPTER 2: CANVA GRAPHIC DESIGNING

Topics	Learning Outcomes
• Getting Started with Canva • Templates in Canva • Designing with Canva • Designing a Poster using Canva	• Students will learn how to use Canva templates for designing projects. • They will learn to use different tools and features in Canva to create visual designs. • They will also be able to download the created designs in desired format.

CHAPTER 3: CANVA PRESENTATIONS

Topics	Learning Outcomes
• Types of Presentations in Canva • Making Presentations in Canva • Creating a Presentation	• The students will learn the different types of presentations in Canva • They will learn to create, customize and organize the presentation slides. • They will also learn to add the multimedia content.

CHAPTER 4: INTRODUCTION TO MS EXCEL

Topics	Learning Outcomes
• Uses of Excel • Starting MS Excel • Creating a new Blank Workbook • Exploring the Workbook • Features of Excel	• Students will understand the basic use of MS Excel • They will learn to create blank workbook, and navigate the workbook's main components • They familiar with the Excel features.

CHAPTER 5: WORKING WITH THE WORKSHEET

Topics	Learning Outcomes
• Data • Entering Data • Changing the Active Cell • Editing Data • Selecting & Formatting Cells	• Formulas • Adding, Renaming & Removing a Worksheet • Saving the Workbook • Students will learn to enter, edit and format data in Worksheet. • They will learn to select cells, rows and columns and apply formatting effectively. • They will enhance their skills in using formulas for calculations and managing worksheets.

CHAPTER 6: EDITING A WORKSHEET

Topics		Learning Outcomes
- Opening a Saved File - Copying & Moving Data - Playing with Rows & Columns - Autofill Feature	- Advanced Excel Formatting - Entering Date & Time - Saving the Workbook	- Here, students will master the editing, copying and moving the data in worksheet. - They will also learn to modify the structure of worksheet by adjusting rows and columns. - They will learn advanced formatting techniques. - They will be proficient in entering and editing data and time. - They will learn to proficiently edit and manage data using shortcuts.

CHAPTER 7: CODING CONCEPTS: ALGORITHMS AND FLOWCHARTS

Topics		Learning Outcomes
- Introduction to Algorithms - Flowcharts - Algorithms and Flowcharts examples		- The students will learn the concept of algorithm. - They will learn to represent algorithms visually. - They will learn about the flowchart rules to present a clear and error-free algorithms - The students will gain experience in creating algorithms and flowcharts with examples.

CHAPTER 8: INTRODUCTION TO PYTHON

Topics		Learning Outcomes
- What is Programming? - What is Python? - Applications of Python Programming - Features of Python Programming	- Getting started with Python - My First Python Program - Python Syntax	- The students will learn Python programming to instruct computers to perform different operations. - They will understand that Python is easy to use, create applications, games, and analyze the data, many more. - They will learn about the python syntax rules, including case-sensitivity, proper indentations, keyword usage, etc.

CHAPTER 9: PYTHON: DATA TYPES, VARIABLES AND OPERATORS

Topics		Learning Outcomes
- Variables - Data Types - Taking Input - Displaying Output - Example Programs		- Students will be able to define and utilize variables to store and manage data including Numbers, Booleans. - They will be applying data types and operators to perform operations and manipulate values effectively. - They will also be implementing input and output functions to interact the users and format text using concatenations.

INTERNET APPS

GRADE - 7

CHAPTER 1: COMPUTER ARITHMETIC

Topics		Learning Outcomes
• Number System • Decimal Number System • Binary Number System	• Octal Number System • Hexadecimal Number System • Binary Arithmetic	• In this, students will learn and understand the basics and significance of different number systems. • They will gain the proficiency to convert the numbers between Decimal, Binary, Octal, and Hexadecimal. • They will be able to apply binary arithmetic operations.

CHAPTER 2: TECHNIQUES OF AI

Topics	Learning Outcomes
• How does a Machine Learn • Techniques of AI	• The students will how does a machine learning model learns to give correct output. • They will also learn the various AI techniques to make the model learn and how they work.

IoT (Internet of Things)

CHAPTER 3: INTRODUCTION TO ANIMAKER

Topics	Learning Outcomes
• What is Animaker? • Getting Started with Animaker • Working with Animaker • Previewing the Animation	• The students will understand the purpose and features of Animaker. • They will enhance their skills in animation projects. • They will also learn to animate characters, effectively use timeline, add voiceovers and transition to animations.

CHAPTER 4: CREATING ANIMATIONS IN ANIMAKER

Topics	Learning Outcomes
• Creating an Animation • Previewing the Animation	• Here, the students will understand the process of creating different scenes. • They will learn to use timeline and adjusting the times of actions with Smart move for better transitions. • They will also be able to preview and finalize the animations to ensure the well-structured video projects.

CHAPTER 5: FORMULAS AND FUNCTIONS

Topics	Learning Outcomes
• Cell Referencing • Cell Range • Formulas • Formula Errors • Functions • Cell Referencing & its Types	• The students will understand the concept of cell referencing and ranging. • They will explore basic formulas of excel like Sum, Average, AutoSum for basic calculations. • They will be proficient in using relative, absolute and mixed cell referencing for accurate formula replications.

CHAPTER 6: ADVANCED FEATURES OF EXCEL

Topics	Learning Outcomes
• MS Excel - Forms • Pivot Table • Data Validation • MS Excel - Charts	• They will understand the advance features of Excel like Forms, Pivot table, Charts, Data management and analysis. • They will learn how to manage data including sorting, filtering and searching data efficiently.

CHAPTER 7: HTML & CSS

Topics	Learning Outcomes
• HTML • HTML Tags & Attributes • Rules of Writing HTML Code	• HTML Tags • CSS • Formatting
	• The students will learn basic structure and role of HTML and CSS in web development. • They will learn to create an HTML code with proper tags and attributes. • They will be familiar with the CSS with style HTML elements that include text formatting, background, and alignments.

CHAPTER 8: CONTROL STRUCTURES IN PYTHON

Topics	Learning Outcomes
• Operators • Operator Precedence • Control Structures • Conditionals	• The students will learn about the different python operators that includes arithmetic, assignment, string, comparison, and logical operator • They will learn to implement control structures such as sequential , conditional and iterative to control the flow of program.

CHAPTER 9: LOOPS IN PYTHON

Topics	Learning Outcomes
• Loops • Types of Loops • Introduction to Turtle • Programming with Turtle • Drawing with Turtle	• Students will understand how to use while and for loops in python to automate repetitive tasks. • They will learn to control graphics using loops to create patterns. • They will enhance their problem-solving skills to achieve desired outputs.

GRADE - 8

CHAPTER 1: COMPUTER NETWORKS

Topics	Learning Outcomes
• Computer Networking • Components used in Networking • Wireless Networking • Advantages of Networking • Network Security	• They will learn about different components of Networking like ISP, Modem, Router, Switch, etc. how it works • They will learn more about wireless technologies and different types of networks like PAN, LAN, MAN, WAN • Here, students will know about the different internet protocols as well.

CHAPTER 2: CYBER THREATS & SECURITY

Topics	Learning Outcomes
• Cyber Safety & Security • Cyber Threats • Cyber Safety for Kids • Cyber Ethics • Cyber Laws	• In this, the students will learn the concept of cyberspace, cyber security and cyber safety. • They will also learn about the cyber threats like malware, hacking, phishing, cyberbullying, etc. • They will recognize the importance of cyber ethics, and cyber laws in promoting the safe responsible online behavior.

CHAPTER 3: INTRODUCTION TO CLOUD COMPUTING

Topics	Learning Outcomes
• What is Cloud Computing? • How does Cloud Computing Work? • Brief History of Cloud Computing • Why is Cloud Computing Needed? • Types of Cloud Computing	• Students will understand the cloud computing from its origin to its working. • They will learn about cloud models (public, private and hybrid) and their associated service models (IaaS, PaaS, SaaS) • They will also learn about the benefits of cloud computing in terms of accessibility, cost-effectiveness, scalability, etc.

CHAPTER 4: AI APPLICATIONS

Topics	Learning Outcomes
• AI Apps • Pioneers in the Field of AI • The Future of AI • AI Ethics	• The students will learn different apps where AI is used • They will understand how the world can change with the use of AI in upcoming years. • They will also understand the ethics of AI.

ROBOTICS

CHAPTER 5: VIDEO EDITING IN CANVA

Topics	Learning Outcomes
• Introduction to Canva • Getting Started with Canva • Canva Video Editing Interface • Creating a Video	• The students will learn to create and edit videos using Canva's video editor. • They will be able to use different templates in Canva. • They can add images, logos and transitions in the video.

CHAPTER 6: HTML & CSS

Topics	Learning Outcomes
• HTML • CSS	• The students will learn how to add images, create lists and tables using HTML. • They will also learn the concept of margin and padding while learning CSS.

CHAPTER 7: DATABASE

Topics	Learning Outcomes
• What is a Database? • Components of a Database • Using a Database • Database Management System • MySQL	• The students will learn the basic components and functions of databases, including tables, fields, records, primary key, foreign key. • They will use SQL commands to create, manipulate and retrieve data from relational database. • They will also learn about the advantages of database.

CHAPTER 8: PYTHON - LISTS AND LOOPS

Topics		Learning Outcomes
• Variables • Data Types • Functions • Operators	• Operator Precedence • Control Structures • Python Lists • Using Lists in Loops	• The students will understand python variables and their types. • The students will also understand different operators and their precedence. • They will also understand how lists work.

INTRODUCTION TO APP DEVELOPMENT