Robotics syllabus structure

- Develop **logical and computational thinking**
- Understand **basic robotics concepts** through play and activities
- Learn **simple programming concepts** (block-based)
- Encourage **creativity, teamwork, and problem-solving**
- Introduce **real-world applications of robots**

CLASS 3 – Introduction to Robotics

Unit 1: What is a Robot?

- What is a robot?
- Robots around us (home, school, hospitals, space)
- Difference between humans and robots
- Building robots using blocks / kits
- Introduction to scratch
- Fun Activity robot: Flashing Indictor Robot

Unit 2: Parts of a Robot

- Main parts: body, brain, sensors, motors
- Simple idea of **input → process → output**
- Building robots using blocks / kits
- Fun Activity Robot: Music Performing Robot

Unit 3: Introduction to Coding (Unplugged)

- What is coding?
- Step-by-step instructions
- Sequencing using blocks
- Building robots using blocks / kits
- Activity: Magical Light Performing Robot

Unit 4: Movements & Directions

- Directions: forward, backward, left, right
- Understanding sequences
- Building robots using blocks / kits

- Activity: Car Robot

Unit 5: Simple Robot Models

- Understanding Moisture Sensor
- Sensor pins and connection (basic idea)
- Building robots using blocks / kits
- Fun Activity : Automated watering system Robot

Assessment

- Oral questions
- Activity-based evaluation
- Drawing / coloring / worksheets

CLASS 4 – Basics of Robotics & Coding

Unit 1: Robots in the Real World

- Types of robots (service, industrial, medical, space)
- How robots help humans
- Safety rules when using robots
- Building robots using blocks / kits
- Activity: Flash Lighting Robot
-

Unit 2: Robot Components (Basic)

- Motors and wheels
- Controller (simple explanation)
- Building robots using blocks / kits
- Activity: Car Robot

Unit 3: Introduction to Block-Based Coding

- What is a program?
- Block coding using tools like Scratch Jr / Scratch
- Commands: move, turn, wait, repeat
- Building robots using blocks / kits
- Activity: Music Performing Robot

Unit 4: Logic & Patterns

- Sequencing and patterns
- Introduction to loops (repeat)
- Debugging (finding simple mistakes)
- Building robots using blocks / kits
- Activity: Automated watering system for Garden

Unit 5: Learning Ultra Sonic Sensor

- Making a moving model (real or virtual)
- Understanding cause and effect
- Understanding Ultrasonic wave and function
- Building robots using blocks / kits
- Activity: Moving Robot with Eyes
-

Assessment

- Coding activities
- Worksheets
- Group projects
- Simple quizzes
