Robotics Syllabus for STD 7 & 8TH

ROBOTICS – SYLLABUS HINTS

1. Flash Light and Musical Performer Robot

1. What is a robot?
2. Robots around us (home, school, hospitals, space)
3. Difference between humans and robots
4. What is coding?
    1. Step-by-step instructions
5. Introduction to light and sound in robots
6. Use of LED and buzzer
7. Input and output concept
8. Simple robot actions
9. Fun robot performance
10. Building robots using blocks / kits

Fun Activity Robot: **Flash Light and Musical Performer Robot**

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2. Car Robot

1. Main parts: body, brain, sensors, motors
2. Simple idea of **input → process → output**
3. Parts of a robot car
4. What is coding?
5. Step-by-step instructions
6. Motor and wheel movement
7. Direction control
8. Basic robot commands
9. Safety while handling robot cars
10. Fun robot performance
11. Building robots using blocks / kits

Fun Activity Robot: **Car Robot**

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3. Robot Car with Eyes

1. Sensors as robot eyes
2. Obstacle detection
3. Automatic stopping and turning
4. Collision avoidance
5. Real-life applications
6. Building robots using blocks / kits

Fun Activity Robot: **Car Robot with eyes**

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4. Coded Lock with 4 LED, Push Button and Servo Motor

1. Introduction to coded lock system
2. Push buttons used for entering the secret code
3. LEDs used as indicators (correct / wrong code)
4. Servo motor for opening and closing the lock
5. Safety and security applications of coded locks
6. Building robots using blocks / kits

Fun Activity Robot: **Coded Lock Robot**

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5. PIR Sensor (with Explanation)

1. Introduction to PIR sensor (Passive Infrared Sensor)
2. Detects movement of humans and animals
3. Works by sensing heat changes in the surroundings
4. Commonly used in security alarms and automatic lights

5. Helps in saving energy and improving safety
6. Building robots using blocks / kits

Fun Activity Robot: **Human detecting Robot**

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6. Light Sensor and Sound Sensor for Smart Light

1. Introduction to light sensor
2. Introduction to sound sensor
3. Automatic light control
4. Energy saving concept
5. Smart home application
6. Building robots using blocks / kits

Fun Activity Robot: **Light Sensor and Sound Sensor for Smart Light**

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7. Smart Fan with Ultrasonic Sensor

1. Motion detection using sensor
2. Automatic fan operation
3. Energy conservation
4. Smart appliance concept
5. Safety and proper use
6. Building robots using blocks / kits

Fun Activity Robot: **Smart Fan with Ultrasonic Sensor**

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8. Automated Watering System

1. Introduction to moisture sensor
2. Detecting dry and wet soil
3. Automatic watering process
4. Water conservation
5. Uses in gardening and farming
6. Building robots using blocks / kits

Fun Activity Robot: **Automated Watering System**

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9. Never Get Lost

(Navigation & Direction Concept)

1. Introduction to directions
2. Following paths and routes
3. Sensor-based navigation
4. Obstacle awareness
5. Safe movement of robots
6. Building robots using blocks / kits

Fun Activity Robot: **Never Get Lost**