Vivekanand School - MICRO PLANNER (2024-25)							
Month Class 6	**Sessions**	**Topic**	**Activity**	**Kits**	**Skills**	**Learning Outcome**	**Teacher Mannual**
July	1	Revision of Ablox with LED, Projects	Led Blinking, Traffic Light, Switch Control Led	Ablox	Electronics and Logical Thinking	1. Students will learn how to design a simple circuit that includes an LED, a switch, and appropriate resistors. 2. Students will be introduced to block-based programming environments compatible with Arduino.	
	2	led with potentiometer	Led Fading	Ablox	Electronics and Logical Thinking	1. Understand how a potentiometer can be used to vary resistance and consequently adjust the brightness of an LED. 2. Learn how to visually program the Arduino using blocks to read the potentiometer value and control the LED brightness.	NA
	3	Servo motor	Servo Interfacing	Ablox	Electronics and Logical Thinking	1. Learn about servo motors, their components, and how they differ from other types of motors. 2. Understand how to program a microcontroller (like Arduino) to control a servo motor.	NA
	4	Ultrasonic sensor	Ultrasonic sensor interfacing with Arduino	Ablox	Electronics and Logical Thinking	1. Learn about ultrasonic sensors, including how they work using sound waves to measure distance. 2. Develop programming skills to control the ultrasonic sensor using Arduino, particularly in sending ultrasonic pulses and measuring their reflection.	NA
	5	Final Project	Problem Statement	Ablox	Electronics and Logical Thinking	1. Learn about different types of sensors (like ultrasonic, infrared, or motion sensors) that can be used to trigger the gate's opening and closing. 2. Encourage creativity in applying the automated gate system to real-world scenarios, like home automation, parking barriers, or secure entry systems.	NA

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Month Class 7	**Sessions**	**Topic**	**Activity**	**Kits**	**Skills**	**Learning Outcome**	**Teacher Mannual**
July	1	Revision of Arduino	Traffic Light	Arduino Uno Tinkering Kit	Electronics and Creativity	1. Learn how to connect LEDs and resistors on a breadboard. 2. Learn about digital output and the delay() function to manage timing.	
	2	Control statement	Led control with switch	Arduino Uno Tinkering Kit	Electronics and Creativity	1. Learn how switches can be used as digital inputs to control LEDs (digital outputs). 2. Grasp the concept of a pull-up or pull-down resistor and why it is necessary for stable button operation.	NA
	3	Introduction to Robotics	Ultrasonic sensor interfacing with Arduino	Arduino Uno Tinkering Kit	Electronics and Creativity	1. Learn about ultrasonic sensors, including how they work using sound waves to measure distance. 2. Develop programming skills to control the ultrasonic sensor using Arduino, particularly in sending ultrasonic pulses and measuring their reflection.	NA
	4	Types of movements	Understanding and using IR sensors with Arduino	Arduino Uno Tinkering Kit	Electronics and Creativity	Learn to write code to read the input from the IR sensor and perform an action (like turning an LED on/off).	NA
	5	Motion and Time	Servo Motor	Arduino Uno Tinkering Kit	Electronics and Creativity	1. Gain experience in connecting a servo motor to an Arduino, understanding the wiring for power, ground, and control signal. 2. Learn how to use the Arduino Servo library to manage servo movements.	NA

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Month Class 8	**Sessions**	**Topic**	**Activity**	**Kits**	**Skills**	**Learning Outcome**	**Teacher Mannual**
July	1	Introduction to Arduino with LCD	IR sensor integration with LCD	Arduino Uno Tinkering Kit	Electronics and Creativity	1. Learn how IR sensors detect infrared light and how they are used in various applications. 2. Gain experience in setting up circuits on a breadboard with the IR sensor, Arduino, and other components.	
	2	Code for LCD	Code for LCD (Displaying a Message)	Arduino Tinkering Kit	Engineering & Technological Skill	1. Understand the purpose of various functions provided by the library, such as begin(), clear(), setCursor(), and print().	NA
	3	Sound Alert	Integration of Buzzer with LCD using Arduino	Arduino Tinkering Kit	Engineering & Technological Skill	1. Developing skills in writing code to control hardware components using Arduino's programming language. 2. Learning to connect and integrate different hardware components (buzzer) with Arduino, improving understanding of circuitry and electronics.	NA
	4	Project	Arduino based smart home security system	Arduino Tinkering Kit	Engineering & Technological Skill	1. Developing troubleshooting and debugging skills for code and hardware connections, transferable across domains. 2. Applying theoretical concepts to real-world engineering and technological scenarios for practical understanding.	NA
	5	Ultrasonic sensor	Introduction to Ultrasonic Sensors	Robotics Tinkering Kit	Problem Solving	1. Grasp the basic principle of how ultrasonic sensors work: transmitting a sound wave and receiving the echo to measure distance. 2. Learn the basics of connecting an ultrasonic sensor to a microcontroller like Arduino.	NA

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Month Class 9	**Sessions**	**Topic**	**Activity**	**Kits**	**Skills**	**Learning Outcome**	**Teacher Mannual**
July	1	Electromagnetic Switch	Relay Introduction & Integration	Arduino Tinkering Kit	Engineering & Technological Skill	Students learn about the fundamental principles of relay operation, including electromagnetism, coil energization, and mechanical switching. They understand how relays act as electrically operated switches, controlling high-power circuits using low-power control signals.	
	2	Switching Concept	Integration of LEDs with relay	Arduino Tinkering Kit	Engineering & Technological Skill	Students deepen their understanding of relay operation by exploring how relays can be used to switch high-power loads such as LEDs. They learn about the coil, contacts, and the switching mechanism within the relay.	NA
	3	Coding with Hardware	Code for Controlling Relay using Arduino	Arduino Tinkering Kit	Engineering & Technological Skill	Students learn how to use digital output pins on the Arduino board to control external devices such as relays. They understand the concept of digital output, where the Arduino can set a pin to either HIGH (5V) or LOW (0V) to control the state of the relay.	NA
	4	Technology Communication	Introduction to Communication	Arduino Tinkering Kit	Engineering & Technological Skill	students learn about digital communication channels such as email, social media, instant messaging, and video conferencing. They understand how to adapt communication strategies for different digital platforms and audiences.	NA
	5	Technology Communication	Code for Bluetooth Communication	Arduino Tinkering Kit	Engineering & Technological Skill	Students learn about Bluetooth as a wireless communication protocol and its application in connecting devices over short distances. They understand the principles of serial communication and how Bluetooth enables data exchange between devices.	NA