MAKER &CODER
EXPLORE, INNOVATE, EXCEL

THE FUTURE IS IN YOUR HAND

7+
TO UNIVERSITY

World's 1st Ingenious
MULTI-CODING, ROBOTIC & AIOT.

- CODING
- ROBOTICS
- STEAM
- AI
- IOT
- ROS

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Empowering
The **Next Generation** Of
MAKERS & CODERS

www.makerandcoder.com

VISION

Our Vision is to pioneer the future of Next-Gen Education through innovative technology that transforms learning experiences by inspiring, engaging, and shaping the minds of tomorrow.

MISSION

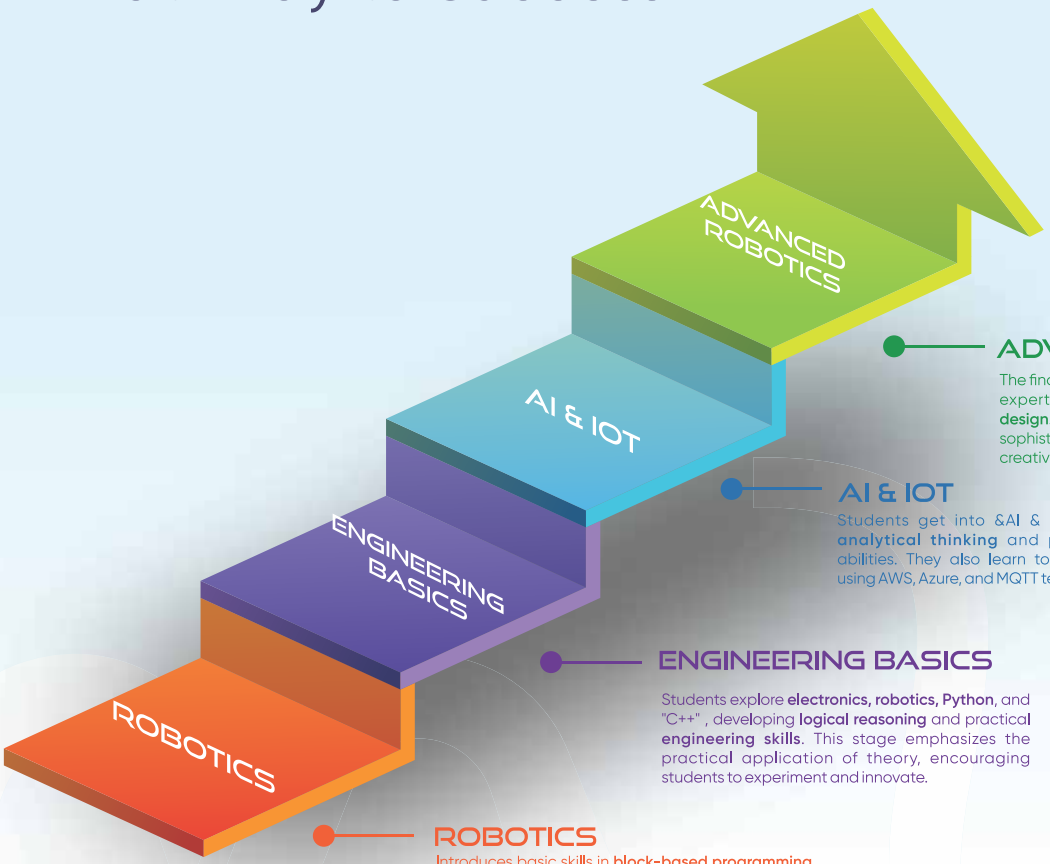
At Maker & Coder, our mission is to equip students with the most advanced learning kit, designed to bring their ideas to life and prepare them for the future of work. We are committed to creating the next generation of Makers and Coders by providing hands-on, dynamic learning experiences that foster creativity, critical thinking, and technological proficiency.

At Maker & Coder, we're redefining education by empowering the next generation of innovators with advanced learning tools that transform classrooms into hubs of creativity and exploration, guiding learners from beginner basics to industrial-level expertise.

MC 4.0
Learning System

	Base kit	AIOT kit	Advanced Kit
Suitable for			
Age Grade	07 Years - 15 Years Primary ⟶ Middle		15 Years + Higher ⟶ University
Kit Series	Base kit	AIOT Kit	MC 4.0 Autonomous
Add-On Series		AIOT Add-on	Autonomous Add-On
Programming Language	Scratch, python, ARDUINO		Visual Studio Code, MATLAB, ROS inside!
3D Simulator	Scratch, python		
Sensors	Ultrasonic Line-Follower	Ai Camera Environment Sensor	LiDAR | GPS
Actuators	4 -DC Encoder Motors	4 -DC Encoder Motors | 2-Servo Motors | 4 Channel Relay Module	

MAKER & CODER'S
Pathway to Success



ADVANCED ROBOTICS
The final step equips students with industry-ready expertise in **MATLAB**, **ROS**, and **engineering design**. This stage prepares students to create sophisticated projects, fostering leadership and creativity for real-world applications.

AI & IOT
Students get into &AI & IoT **emphasizing analytical thinking** and **problem-solving** abilities. They also learn to connect systems using AWS, Azure, and MQTT technologies

ENGINEERING BASICS
Students explore **electronics, robotics, Python**, and "C++" , developing **logical reasoning** and practical **engineering skills**. This stage emphasizes the practical application of theory, encouraging students to experiment and innovate.

ROBOTICS
Introduces basic skills in **block-based programming**, **critical thinking**, and **hands-on learning**. This step focuses on making learning accessible to beginners, inspiring curiosity and foundational knowledge in **steam**.

Our educational goal is to equip students with the tools and mindset required to thrive in a rapidly evolving world. By creating a pathway of continuous learning—from foundational skills to industry-level expertise—we prepare students to become innovative thinkers and problem-solvers. Through this progression, they acquire the technical proficiency and critical thinking abilities necessary to contribute meaningfully to society and to take on leadership roles in their future careers.

SUPPORTS **MULTI-CODING** PLATFORMS

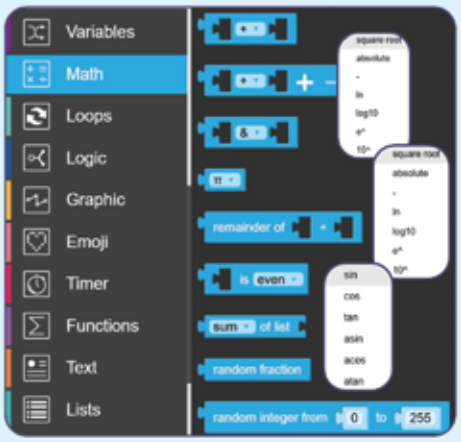
SCRATCH · python · Visual Studio · ROS · LabVIEW · MATLAB

MAKER & CODER

MClab

Welcome to MCLab! the ultimate learning space for programming with MC4.0! Designed as an interactive lab for both teachers and students, MCLab offers an environment to explore coding through both block-based and script-based languages. With MCLab, teachers can empower their students to grasp complex programming concepts while having fun, making it ideal for STEAM education at any level. This platform transforms the learning experience, making programming accessible, interactive, and adaptable to each student's pace.

Math Blocks for STEAM: Through specially designed math blocks, students can intuitively build mathematical concepts, enhancing their understanding of STEAM subjects in a hands-on, engaging way.



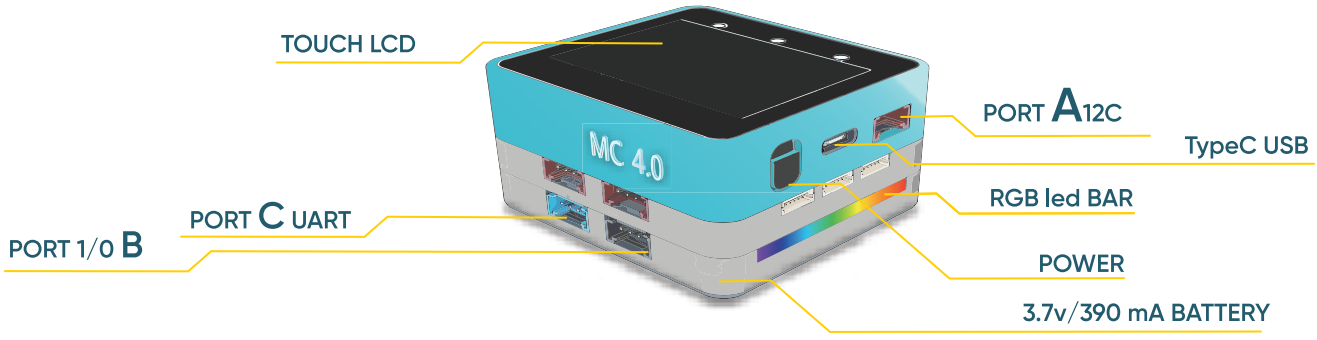
Cross-Platform Accessibility: MC Lab is available on web, Android, iOS, Mac, and Windows. Every student can carry their own programming lab in their hand, creating a personalized learning experience wherever they are.

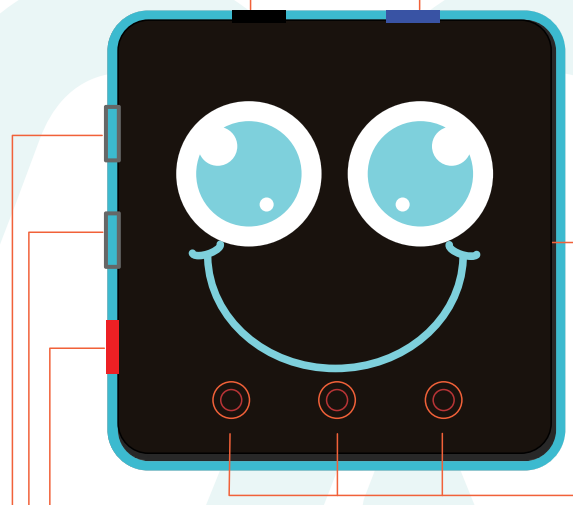
Coding Flexibility: Program MC4.0 your way! MC Lab supports both block-based coding for beginners and script-based languages like Python for more advanced students, allowing everyone to learn at their level and pace.

Explore
THE MC4.0

Exploring MC4.0

MC 4.0 is not just an upgrade; it's a revolution in educational technology. This Next-Gen controller redefines what's possible in the classroom, offering features that no other device can match With its groundbreaking drag-and-drop touchscreen interface learning transition from block-based programming to Python and C++ to ROS and MATLAB, and integration with AI, IoT, and robotics, MC 4.0 is a leap ahead of its time.





PORT B
Port B is a standard GPIO port which support both analog and digital

PORT C
Port C can handle Input/Output but also capable of UART Communication

TOUCH LCD SCREEN
The display of the MC4.0 is a 320x240 pixel full color screen

TOUCH BUTTONS
MC4.0 has 3 buttons which can be Programmed to control all sort of action

PORT A
Can handle basic input/output but also capable 12C communication

TYPE-C USB PORT
This port for charging the device and uploading codes

POWER BUTTON
Single press-ON
Long Press (6-sec)-OFF

What's Included?

3-AXIS SENSOR
Detect motion and orientation in three dimensions

REAL TIME CLOCK
Maintain accurate time and date for scheduling tasks

MICROPHONE & SPEAKER
Detect motion and orientation in three dimensions

Output clear sound for audio alerts and content

VIBRATION MOTOR
Detect motion and orientation in three dimensions

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BASE KIT

MC4.0 BASE KIT

7-15 Years +
Age

Primary/Middle
Grade

Integrated Learning Experience

With the Base Kit, students can dive into hands-on learning using **ultrasonic sensors** and **encoder motors** paired with **mecanum wheels**. This setup offers real-time feedback and precise control, enabling students to explore robotics concepts, from basic movements to complex navigation and control systems.

Programming for Every Student

With support for both block-based programming and Python, the Base Kit caters to various learning stages. This flexibility ensures that students can start with simple tasks and progress to more complex programming concepts easily.

MC4.0 BASE KIT

Touch Screen Interface

Experience a revolution with our **drag-and-drop programming** on a touchscreen controller. This innovative feature transforms complex coding into an intuitive process, similar to the shift from traditional phones to modern touchscreens.

Create and Innovate

Empower your students to design custom smartphone apps that interact with their robots through **Remote+**. This feature provides an easy way to create user interfaces that can control the robot's inputs and outputs, enhancing their understanding of **IoT** applications

What's Included?

- Kit Bag
- MC4.0 Controller
- DC encorder drive module
- Battery Module (Stack on the controller)
- Chassis
- Fixture add-on
- 4x DC Encoder Motors
- 4x Mecanum Wheel
- Line Follower Sensor
- Ultrasonic Sensor
- Lithium Battery Pack
- Screwdriver
- 4x Motor shaft coupler
- 4x Brass Stud M4*40
- 6x Screw M3x30
- 10x Screw M3x25
- 2x Screw M4x10
- 8x Nut M3
- 4x DC encoder motor
- cables

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AIOT KIT

MC4.0 AIOT KIT

15 Years +
Age

Secondary
Grade

AI Powered Learning

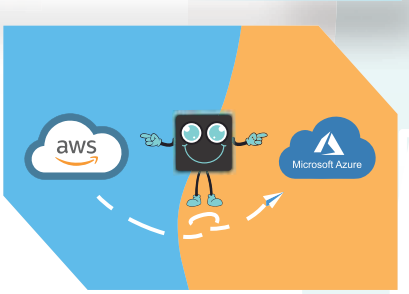
The AIoT Kit takes learning to the next level by integrating an AI camera that enables students to explore advanced topics like color recognition.

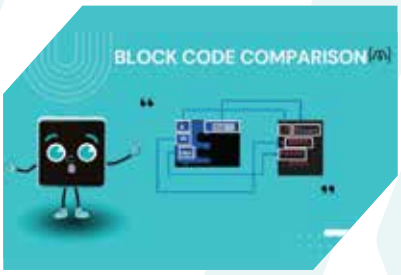
Real World Interaction

The relay module in the AIoT Kit enables interaction with real-world components, giving students hands-on experience in controlling external devices and understanding the practical applications of IoT technology.

Cloud Connectivity

This kit features seamless integration with **AWS** and **Azure**, allowing students to connect their projects to cloud platforms. This functionality introduces them to cloud computing and data management, essential skills in today's technology-driven world.



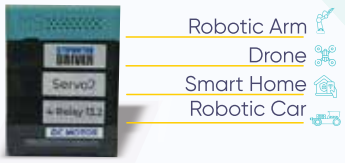


Multi-Coding

MC 4.0 supports an easy transition from block-based programming to Python and then to C++. This flexible approach allows students to start with simple drag-and-drop coding and progress to more advanced, industry-standard languages, ensuring that the kit evolves with their growing skills and knowledge.

Expanding Possibilities

An extension port in the AIoT Kit allows for further customization and expansion, encouraging students to think creatively about how they can enhance their projects. This feature supports the development of critical thinking and problem-solving skills.



MC4.0 AIOT KIT

What's Included?

- Kit Bag
- MC4.0 Controller
- DC encorder drive module
- Battery Module (Stack on the controller)
- Chassis
- Fixture add-on
- 4x DC Encoder Motors
- 4x Mecanum Wheel
- Ai Camera
- 1x Extension IO
- 1x 4-Channel Relay Module
- 1x Environmental Sensor
- Line Follower Sensor
- Ultrasonic Sensor
- Lithium Battery Pack
- Screwdriver
- 4x Motor shaft coupler
- 4x Brass Stud M4*40
- 6x Screw M3x25
- 10x Screw M4x10
- 2x Screw M4x8
- 8x Nut M3
- 4x DC encoder motor cables
- 2x Grove Cables
- All cables needed

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MC4.0 ADVANCED KIT

ADVANCED KIT

18 +
Age

Higher Education
Grade

Push The Boundaries To Robotics

The Advanced Kit builds on the AIoT Kit's foundation by incorporating a lidar sensor for precise distance measurement and mapping. This addition elevates students' abilities to tackle complex robotics projects with advanced navigation capabilities.

Explore Autonomous Navigation

The Advanced Kit empowers students to dive into autonomous robotics, with a focus on precision navigation using lidar technology. This kit allows learners to experiment with self-guided movement, obstacle avoidance, and path planning, mimicking real-world applications in autonomous vehicles and robotics.

Master Advanced Learning programming Languages

With support for C++, ROS, and MATLAB, the Advanced Kit offers a seamless transition from block-based coding to industry-standard languages. This flexibility prepares students for higher education and careers in robotics, AI, and engineering, giving them the tools to tackle real-world problem

MC4.0 ADVANCED KIT

What's Included?

- 1 x Kit bag
- 1 x MC4.0 Controller
- 1 x DC encoder driver module
- 1 x Battery Module (Stack on the controller)
- 1 x Chassis
- 1 x Fixture add-on
- 4 x DC Encoder Motors
- 4 x Mecanum Wheel
- 1 x AI Camera
- 1 x Extention IO
- 1 x 4-Channel Relay Module
- 1 x Environmental Sensor
- 1 x Line Follower Sensor
- 1 x Ultrasonic Sensor
- 1 x Lithium Battery Pack
- 1 x Screwdriver
- 4 x Motor shaft coupler
- 4 x Brass Stud M4*40
- 6 x Screw M3×30
- 10 x Screw M3×25
- 2 x Screw M4×10
- 14 x Screw M4×8
- 8 x Nuts M3
- 4 x DC Encoder motors cables
- 2 x Grove Cables
- Lidar
- All cables needed

MC4.0 STEAM KIT

7 +
Age

Primary/Middle
Grade

Robotic Manipulation & Control

Discover the capabilities of robotics in material handling by building a robot equipped with a gripper and tracks. Students can experiment with object manipulation, learning about control systems and the importance of robotics in automation, aligning with American NGSS engineering practices.

Mastering Mechanics with Gears

Delve into the mechanics of gear systems by constructing a walking robot that uses gears for motion transmission. MC4.0 STEAM kit provides insights into mechanical engineering concepts, emphasizing the application of gears in robotics, relevant to both IB MYP design criteria and the Indian CBSE physics curriculum.

Biomimicry in Robotics

Explore the fascinating world of biomimicry by building a robot that mimics the movement of spiders. This engaging activity helps students learn about efficient locomotion, sensor integration, and programming, offering a hands-on experience that aligns with American NGSS life sciences standards and IB design principles.

Robotic Wing Dynamics

Engage in the study of movement by constructing a robot with flapping wings. introduce students to the principle's bones within wings, providing a practical application of engineering and physics concepts. It aligns with curriculum standards focused on mechanical design and innovation in robotics.

Autonomous Navigation and Robotics

Learn about autonomous navigation and robotic algorithms by constructing a three-wheel robot capable of line-following and obstacle avoidance. MC4.0 STEAM kit activities enhances understanding of programming and sensor integration, supporting curriculum goals in American NGSS technology and Indian CBSE computing.

Environmental Monitoring and Robotics

Dive into environmental science and robotics by building a robot designed for environmental monitoring and object detection. highlights the integration of robotics in real-world applications such as search and rescue, aligning with the American NGSS for environmental science.

Real-World Robotics Challenges

Immerse students in real-world robotics applications by building a robot that is designed to navigate complex environments. MC4.0 STEAM kit emphasizes problem-solving and critical thinking, as students program the robot to detect and respond to obstacles using the ultrasonic sensor. The lesson aligns with American NGSS engineering practices and IB MYP design.

01 Multidisciplinary Projects
The STEAM Kit allows students to build various robots, using tools like the MC 4.0 and ultrasonic sensors. The drag-and-drop interface makes it easy to integrate multiple disciplines into creative projects.

02 Creative Problem Solving
Encouraging innovation, the STEAM Kit enables students to experiment with different robot designs and functions, fostering hands-on learning and critical thinking.

03 Building The Future
By integrating technology and creativity, the STEAM Kit prepares students for the challenges of tomorrow, making it a versatile tool in any classroom.

04 Robotics in Practice
With line-following and ultrasonic sensors, students can design robots that navigate environments and complete tasks, bridging the gap between theory and real-world applications.

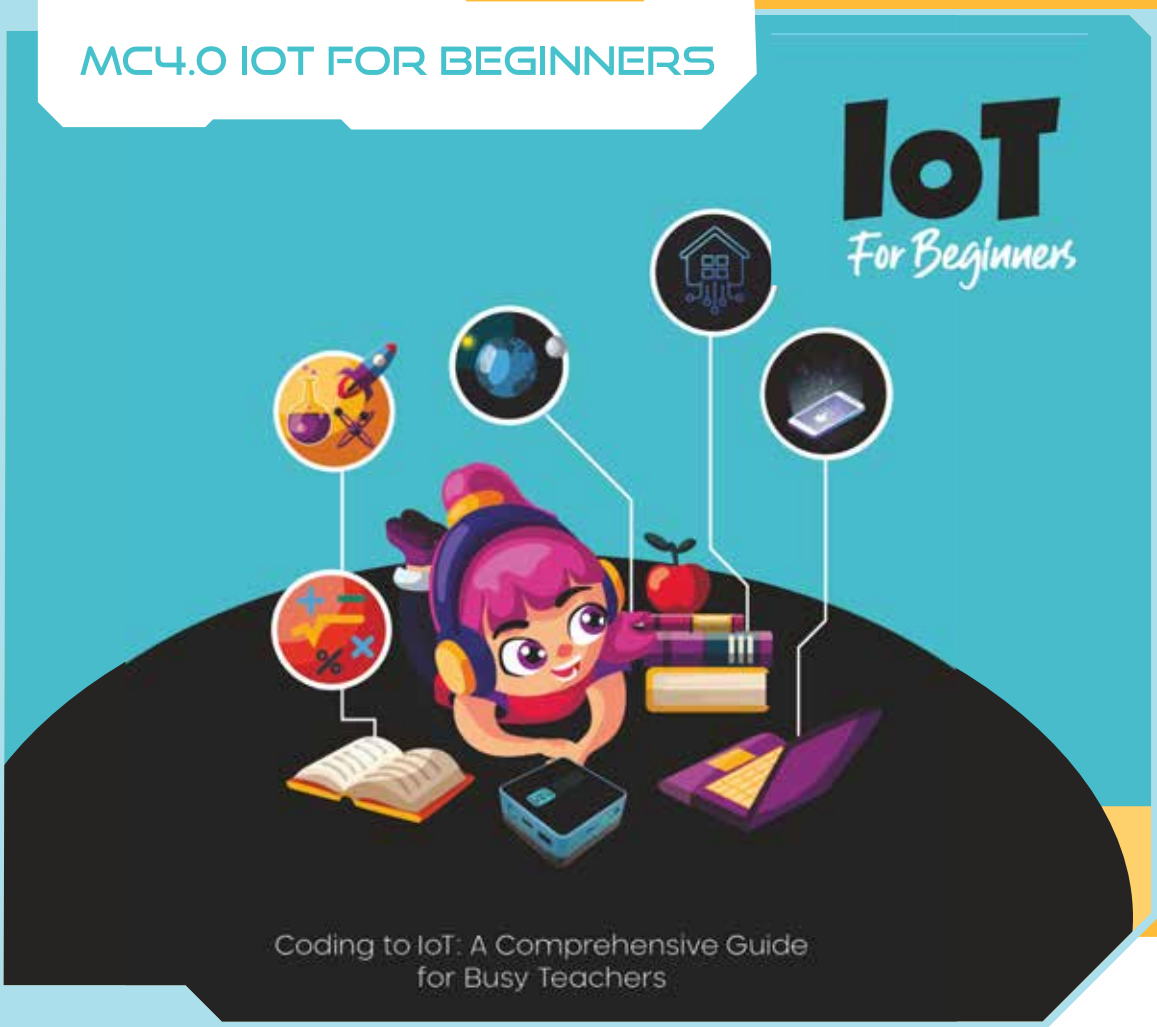
05 Practical Engineering
The kit's components, like encoder motors, allow students to apply engineering principles in a practical, interactive way, enhancing their understanding of robotics and mechanics.

What's Included?

- 1x educational tray box
- 1x MC4.0 Controller
- 1x Battery base
- 1x DC motor driver
- 1x Ultrasonic sensor
- 1x Line-follower sensor
- 2x DC Motor-25 (188RPM)
- 1x Metal Gripper Pack
- 1x Dual Shaft Servo Pack
- 2x Linkage 0208-24
- 2x Beam 1030-100-B
- 2x Beam 1030-100
- 2x Beam 1030-132
- 4x Beam 0410-106
- 4x Beam 0410-130
- 2x Beam 0410-154
- 2x Beam 0410-186
- 1x Slide Beam 0824-16
- 2x Slide Beam 0824-32
- 1x Acrylic Bracket
- 2x 25 Motor Bracket
- 4x Driving Flange Hub 4mm
- 2x Flat shaft 4-160
- 8x Headless Screw M4*5
- 6x Countersunk Screw M3*6
- 2x Pan Head Screw M2*4
- 30x Screw Nut M4
- 15x Nylon Locknut M4
- 40x Screw M4*8
- 15x Screw M4*10
- 10x Screw M4*14
- 15x Screw M4*20
- 6x Screw M4*35
- 8x Aluminum Column 4*6*6
- 30x Nylon Spacer 4*7*2
- 15x Nylon Spacer 4*7*3
- 10x Nylon Spacer 4*7*10
- 1x PH1 Screw Driver
- 1x M1.6-M4 Multifunction Wrench
- 1x 2mm Hex Key
- 8x Copper Bearing 4*8*3.5
- 12x 56T-Plastic Gear
- 2x 8T-Plastic Gear (Flat Hole)
- 1x Track Pack (54)
- 2x Tire 64*16
- 1x Plastic Caster

BIGGINERS

MC4.0 IOT FOR BEGINNERS

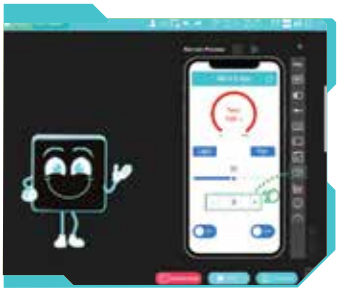


Age 7+

Grade Primary

Simplifying IoT Concepts

The IoT Kit allows students to build and understand IoT systems with ease, using the touchscreen-enabled MC 4.0 controller. The drag-and-drop interface simplifies the complex interactions between sensors and actuators, making it ideal for learning the basics of IoT.



Hands-On Learning

The kit's combination of sensors and the MC 4.0 controller provides a practical introduction to IoT, making abstract concepts tangible. Students gain experience in connecting, programming, and deploying IoT devices in a classroom setting.

Building Connected Devices

Students can use the IoT Kit to design connected devices that interact with their environment, fostering an understanding of how IoT systems function in real-world applications. The drag-and-drop programming interface allows for quick iteration and development.

Interactive Data Display

The **MC4.0** offers a customizable UI that allows students to visualize real-time sensor data from the **IoT for Beginners book**. This interactive feature lets users monitor various environmental metrics, making **IoT** concepts easy to understand and apply in practical projects.

MC4.0 IOT FOR BEGINNERS

What's Included?

- MC4.0 Controller
- Battery Module
- Wireless Battery Charger
- ENV III Unit
- Unit - EARTH
- Unit - RGB
- Unit Angle
- PIR Motion Unit
- Unit - Light
- Unit Hub

How do you simplify TEACHING with MAKERS&CODERS?

Comprehensive Learning Portal

The Maker & Coder Learning Portal is a Learning Management System designed to make your teaching experience smoother. It offers a wealth of resources, including ready-made lesson plans and step-by-step guides, allowing you to integrate our kits into your curriculum effortlessly. With the portal, you can track student progress, assign tasks, and access a variety of learning materials that are regularly updated to keep pace with the latest educational trends.

Expert Training Programms

We offer extensive training programs tailored to your needs, ensuring you feel confident using the Maker & Coder kits in your classroom. Whether you're new to robotics and coding or looking to expand your existing knowledge, our workshops and one-on-one sessions provide hands-on experience and practical strategies for effective teaching.

Ongoing Support

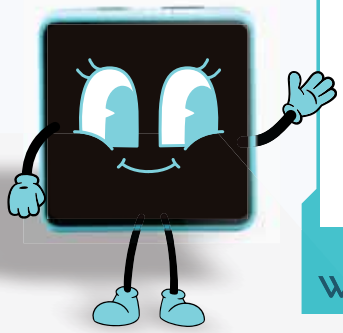
Our commitment to your success doesn't end after training. We provide continuous support through various channels, including live chat, email, and phone consultations. Whenever you encounter challenges or need advice on integrating our kits into specific lessons, our team is here to assist you.

Customized Supports

We understand that every classroom is unique, which is why we offer customized solutions to fit your specific teaching goals. From tailored lesson plans to specialized components, we work with you to ensure that the Maker & Coder kits meet your students' needs and help you achieve your educational objectives.

Engage and Insprire

With our comprehensive support system, teaching with the Maker & Coder kits becomes an engaging and inspiring experience for both you and your students. We provide everything you need to turn complex STEM concepts into interactive and enjoyable lessons, empowering you to inspire a love for learning in your classroom.



Book a
WORKSHOP!

Shape tomorrow,
COMPETE today:

THE NEXT GEN AI & IOT Challenge

Robotics Competition Maker and Coder Championship

Maker and Coder Championship is an engaging innovation competition presented by Maker and Coder, designed to Insplre students In the fields of robotics, coding, loT, and Al. At its core, the challenge revolves around hardware construction and programming, alming to create a dynamic envlronment that guldes students through every stage of project development whlle igniting a passion for transforming Ideas Into reality.

SDG Goals

The competition reflects the ethos of SDG 4 (Quality Education) and SDG 9 (Industry, Innovation, and Infrastructure) by providing an inclusive platform and next-gen tools to enhance education and innovation. Through hands-on learning in robotics, AI, and IoT, it equips students with foundational skills that enables them to engage with emerging technologies and problem-solving techniques. The competition also emphasizes teamwork, collaborative learning, and creativity, encouraging participants to develop both technical and interpersonal skills. By fostering global cooperation and knowledge sharing, the MCC actively supports SDG 17 (Partnerships for the Goals), building partnerships across schools, universities, private companies, and governmental bodies to create a sustainable, innovative educational ecosystem.

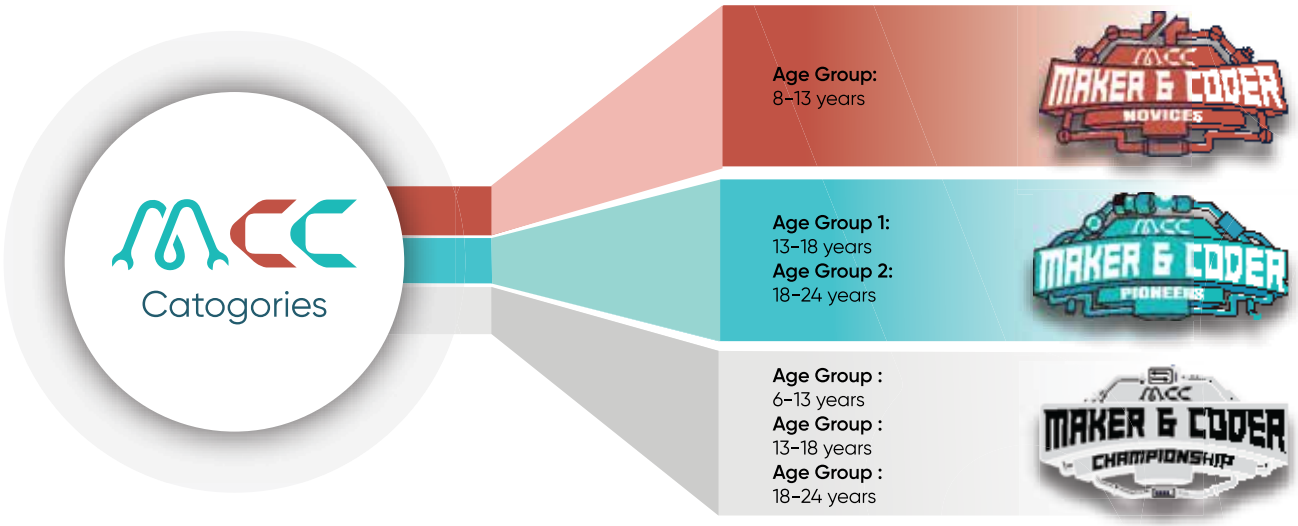
The MCC Jounrney

INNOVATE BOLDLY
Unleash your creativity to tackle global challenges.

COLLABORATE GLOBALLY
Join forces wlth peers worldwide to make a real impact

SHAPE THE FUTURE
Contribute to a sustalnable and Innovatlve world.

LEARN THROUGH PLAY
Experlence the thrill of learning by doing.



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