

Edison Edcreate



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STEM-CTE HUB



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Edison Edcreate

The Edison EdCreate robotics kit offers hands-on STEM learning, where students build interactive models and develop skills in robotics, engineering, and coding. Its versatile components support multiple projects that encourage creativity, problem-solving, and critical thinking.



Grade Level

K - 12th grades

Group Size

Up to 4 students per robot

Time Duration

1 - 2 hours

Content of Kits

Components

- 9 Edison robots
- 4 modification sets
- 4 remotes
- Edison Manual
- cables

Consumables

- AAA batteries



Usage

Getting Started

1. **Familiarize with Components:** Review all parts in the EdCreate kit and learn to operate the robots.
 2. **Integrate with Edison Robot:** Combine components with one or two Edison robots for most builds.
 3. **Start Building:** Follow the EdBuild project guides or create custom structures.
 4. **Test and Modify:** Have students test their builds and make necessary modifications.
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Storage

Store all components in the original packaging for easy access and to prevent loss.

Troubleshooting

- Check that all connections are secure.
- Regularly check compatibility with Edison robots.
- Refer to the online guide for troubleshooting specific build issues.



Activity Guide

Beginner

Build the EdTank

Students will use basic EdCreate blocks and one Edison robot to assemble the EdTank. They'll learn how to attach motors, program basic movement commands, and explore tracked movement versus wheels. This activity introduces foundational robotics concepts, including simple construction, motorized movement, and basic coding, helping students build confidence in both hardware assembly and software programming.

Intermediate

Construct the EdDigger

Students will build an excavator-style robot with moving parts, exploring gear ratios, designing a functioning arm, and programming Edison to simulate digging motions. This activity deepens their understanding of mechanical engineering, motor control, and automation. By modifying gear configurations, students can experiment with efficiency and mechanical advantage, reinforcing principles of simple machines.

Advanced

Engineer Complex Machines

Students will push their engineering skills further by designing and building multi-functional robotic machines using multiple Edison robots and EdCreate kits. They might construct robotic arms, conveyor systems, or autonomous vehicles with sensor-based controls. This challenge encourages problem-solving, innovation, and teamwork as students apply engineering principles, advanced programming, and system integration to develop functional prototypes.

Extension Activities:

Design a Real-World Solution

Students will work in teams to design and prototype a custom machine that addresses a real-world problem, such as a robotic delivery system, an automated recycling sorter, or a sensor-based security bot. Using their knowledge of mechanical systems, coding, and automation, they will develop working models, present their designs, and discuss potential improvements. This open-ended challenge fosters creativity, critical thinking, and real-world engineering applications.



Learning Extensions

STEAM Connections: Tech - Robotics - Engineering

Learning Objectives:

- Enhance understanding of robotics
- Engineering, automation, and manufacturing principles
- Problem-solving through hands-on building

Career Connections:

- **Robotics Engineering** – Designing and programming Edison robots builds skills for careers in industrial automation, robotic prosthetics, and AI-driven robotics.
- **Mechanical Engineering** – Building moving parts, gears, and structures helps students develop skills needed for designing machines, vehicles, and mechanical systems.
- **Creative Design & Prototyping** – Innovating with EdCreate fosters creativity and design skills relevant to careers in product design, 3D modeling, and prototyping.
- **Automation & Manufacturing** – Understanding robotic systems and their real-world tasks prepares students for careers in automated assembly, logistics, and smart manufacturing.
- **STEM Education & Research** – Learning robotics and engineering principles prepares students for roles in education, technology outreach, and engineering research.

Essential Employability Skills:

- Critical thinking
- Creativity
- Teamwork
- Technical literacy
- Analytical reasoning





Resources and Accessibility

Safety Guidelines

- Supervise all building activities to ensure safe handling and use of kit components.
- Keep small parts out of reach of young children to prevent choking hazards.

Accessibility

- Ensure workspaces are accessible to all students, including those with physical disabilities.
- Provide tools and modifications to accommodate students' various needs.

Library Catalog



Library Resources



Feedback

QR to feedback survey

