Joining the BotBuilders group

Empowering students to compete in **FIRST Tech Challenges** with the StarterBot prototype

Getting Started

Supporting students in robotics and competition readiness

(It's a journey and getting there is half the fun.)

Overview of BotBuilders group mission

Hands-on Robotics Experience

BotBuilders provides practical robotics projects to enhance student learning and engagement.

Teamwork and Collaboration

The program fosters teamwork and communication skills essential for robotics competitions.

Mentorship and Support

Experienced mentors guide students to develop technical skills and competition readiness.

StarterBot Projects

Accessible projects like StarterBot introduce foundational robotics concepts to beginners. **BotBuilders will help students get their own kits to get started.**

What is the **FIRST Tech Challenge**?

Global Robotics Competition

FIRST Tech Challenge is an international event where student teams showcase their robotics skills.

STEM Education Promotion

The competition encourages learning in science, technology, engineering, and mathematics through hands-on experience. Their knowledge sharing is invaluable.

Robot Design and Programming

Teams design, build, and program robots to complete complex tasks in a competitive environment. Teams share their experiences, and everyone benefits.

Benefits of student involvement in robotics competitions

Problem-Solving Skills

Robotics competitions challenge students to develop innovative solutions to complex problems, improving critical thinking.

Creativity Enhancement

Designing and building robots inspires creativity by encouraging unique ideas and approaches.

Collaboration and Teamwork

Students develop collaboration skills by working effectively in teams during competitions.

Technical Skill Development

Hands-on experience with robotics technology builds valuable technical skills for STEM careers.

Introduction to the StarterBot concept

Getting Started Mechanical Parts

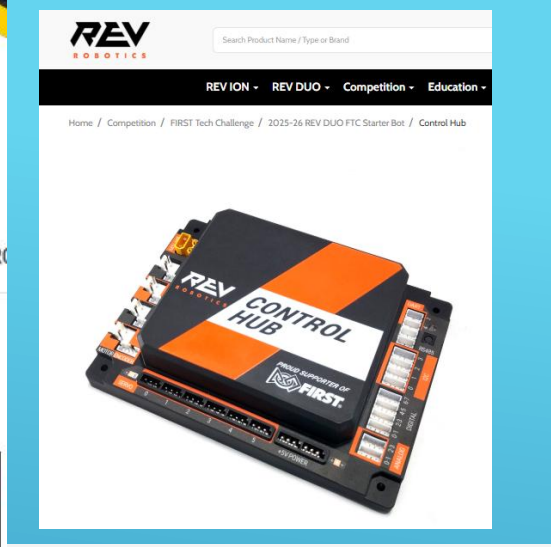
Essential mechanical components form the physical structure and enable movement in the StarterBot. CAD designs accompany the kit helping students gain experience in designing components and setting specifications.

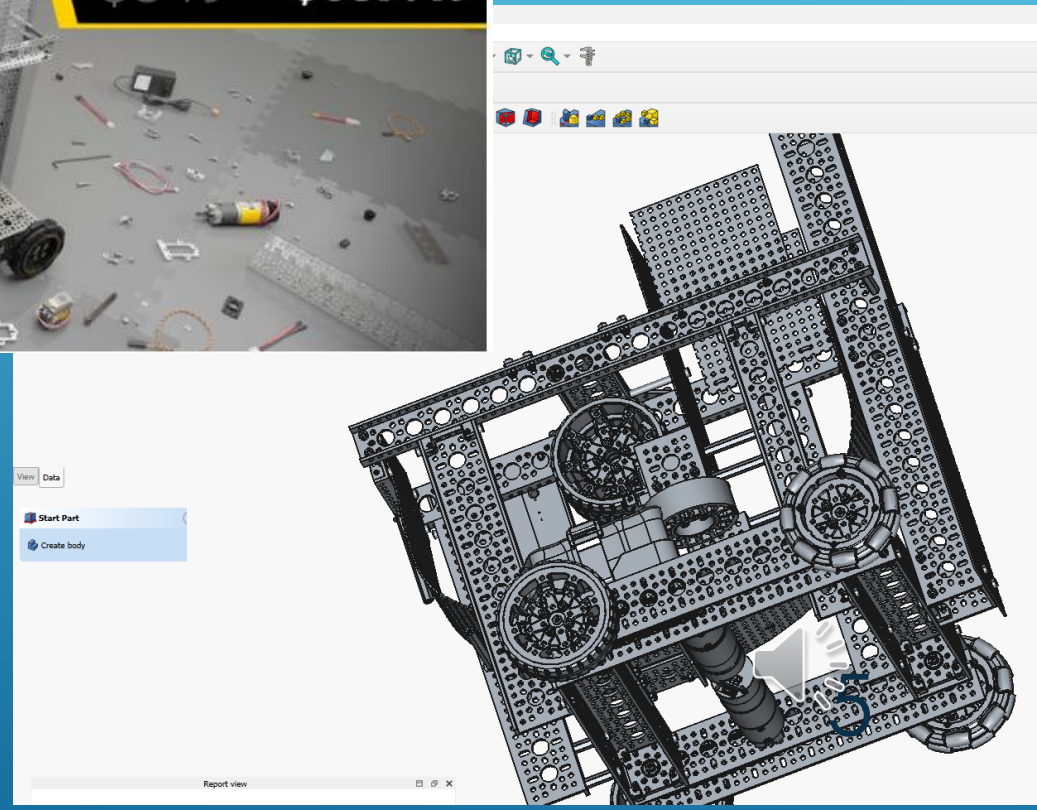
Sensors Integration

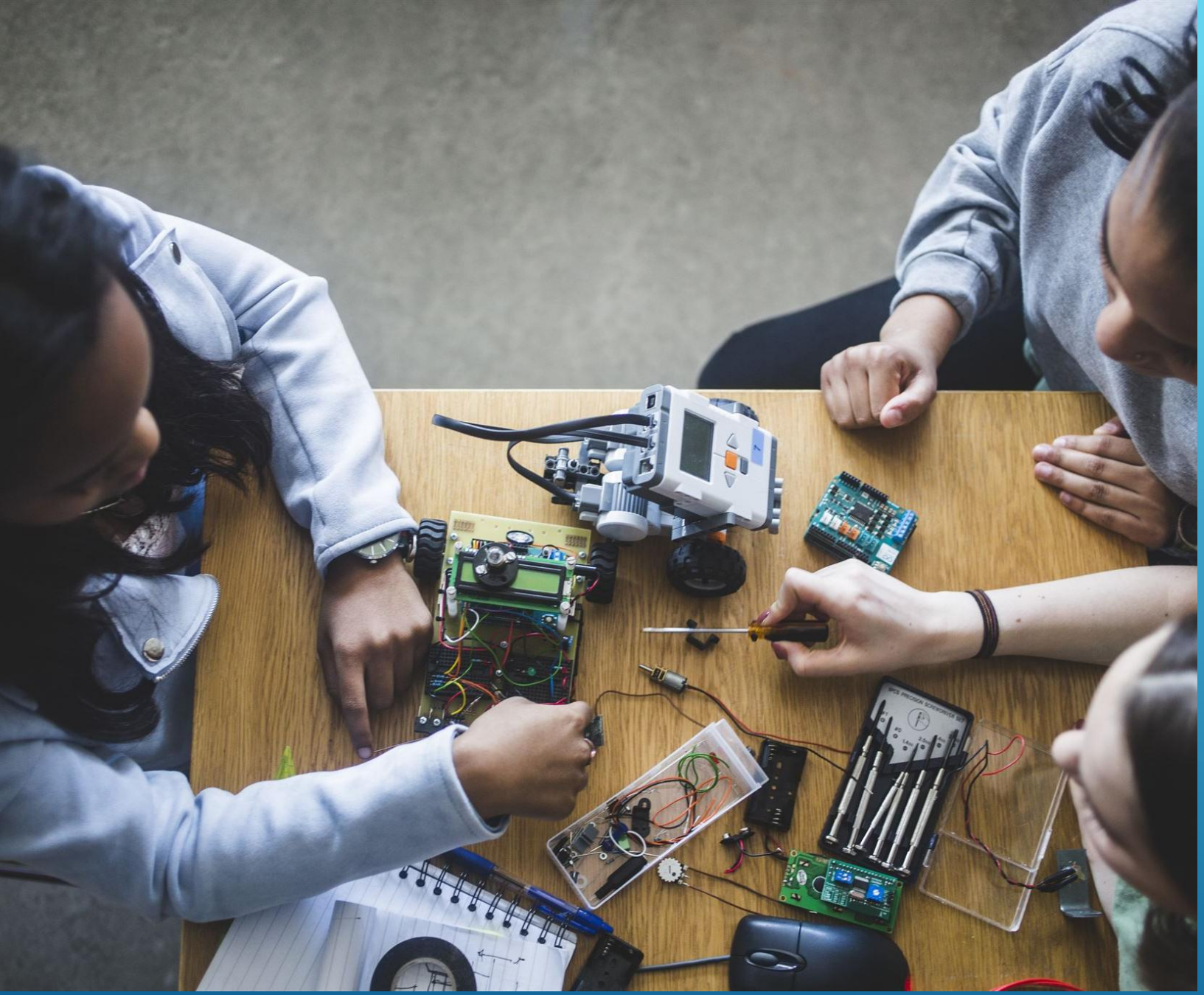
Various sensors detect environmental inputs to help the StarterBot respond intelligently. Competitions consist of autonomous and user-controlled sessions.

Programmable Control Systems

REV Control Hub enables coding and automation, teaching robotics principles effectively providing Wi-Fi connectivity to the robot.







Hands-on building process

Practical Robotics Assembly

Students actively assemble the StarterBot, translating theory into hands-on practice to enhance learning.

Skill Development

The building process cultivates technical skills and boosts students' confidence in robotics construction.

Mechanical engineering fundamentals

Mechanical Design Basics

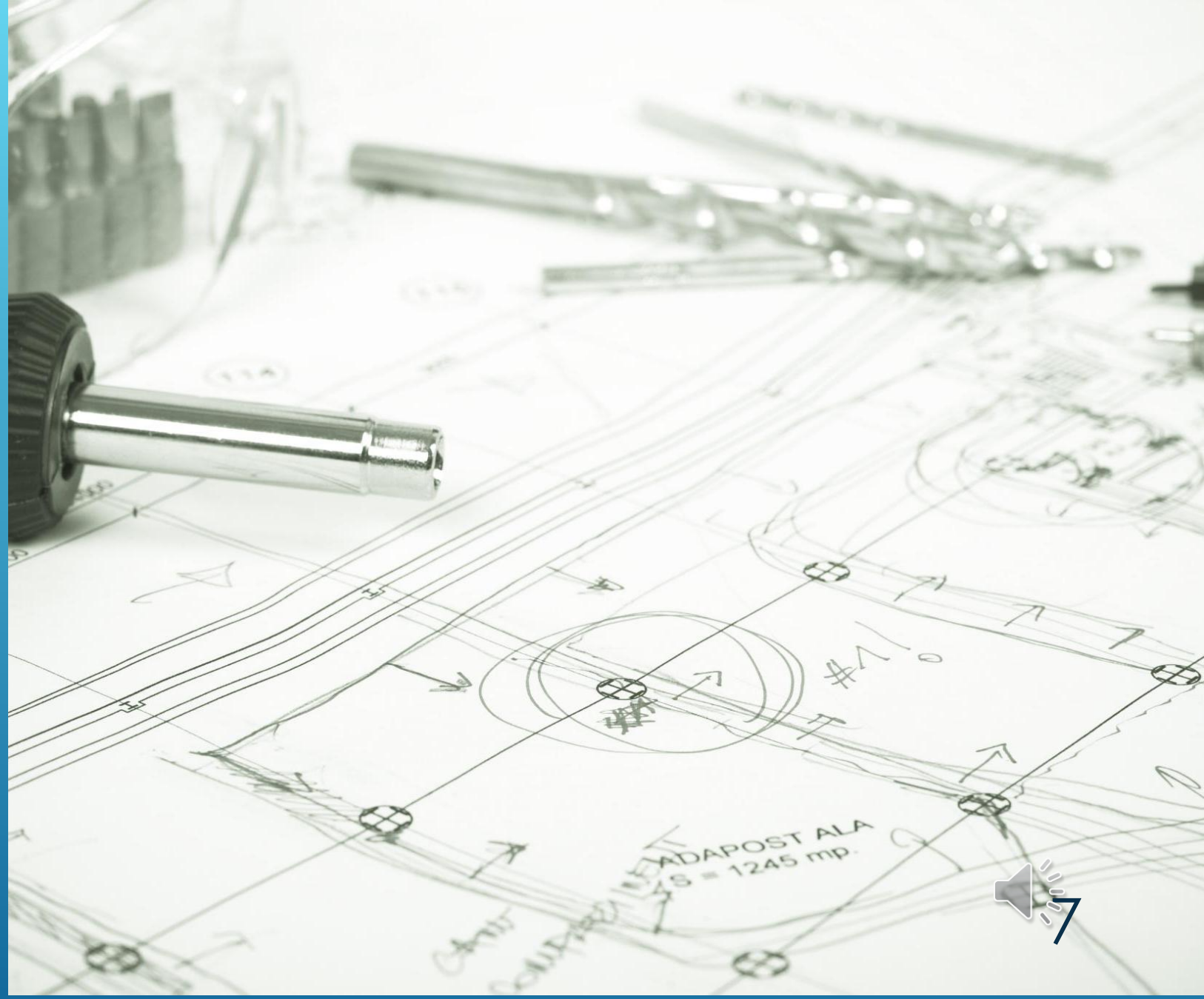
Introduction to mechanical design concepts that focus on creating functional and efficient systems.

Structural Stability

Understanding principles of structural stability to ensure durability and safety of mechanical systems.

Component Integration

Learning how to integrate various components seamlessly for optimal mechanical performance.



Coding Logic Introduction

Students learn fundamental coding logic that forms the basis for programming autonomous robots.

Sensor Integration

Sensor integration teaches students how robots gather environmental data for decision-making.

Control Systems

Understanding control systems is key for making robots responsive and autonomous in tasks.

Basic programming and control systems

Teamwork and project management

Collaboration and Communication

Teamwork enhances collaboration and communication skills essential for successful group efforts.

Leadership Development

Working in teams fosters leadership skills by encouraging responsibility and initiative.

Project Planning and Management

Managing projects teaches essential skills like planning, time management, and problem-solving.

Understanding competition rules and requirements

FTC Current Game and Season Materials

Importance of Rule Compliance

Understanding competition rules helps teams ensure their robots meet all technical and safety standards.

Strategic Planning

Knowledge of requirements allows teams to develop effective strategies tailored to competition challenges.

Strategies for improvement and customization

Design Optimization

Teams refine StarterBot hardware and software to improve functionality and meet competition demands effectively.

Adaptation to Challenges

Teams adjust strategies and customize their robots to overcome specific challenges faced during competitions.

Innovative Solutions

Innovation plays a key role in developing unique solutions that enhance StarterBot performance and competitiveness.

Practice sessions and mock competitions

Skill Refinement

Regular practice allows teams to improve and perfect essential skills required for success.

Issue Troubleshooting

Simulated competitions help identify and resolve problems before real events.

Teamwork Building

Mock competitions foster collaboration and cohesion under competitive conditions.

Support, resources, and community engagement

How BotBuilders helps your student reach their goals

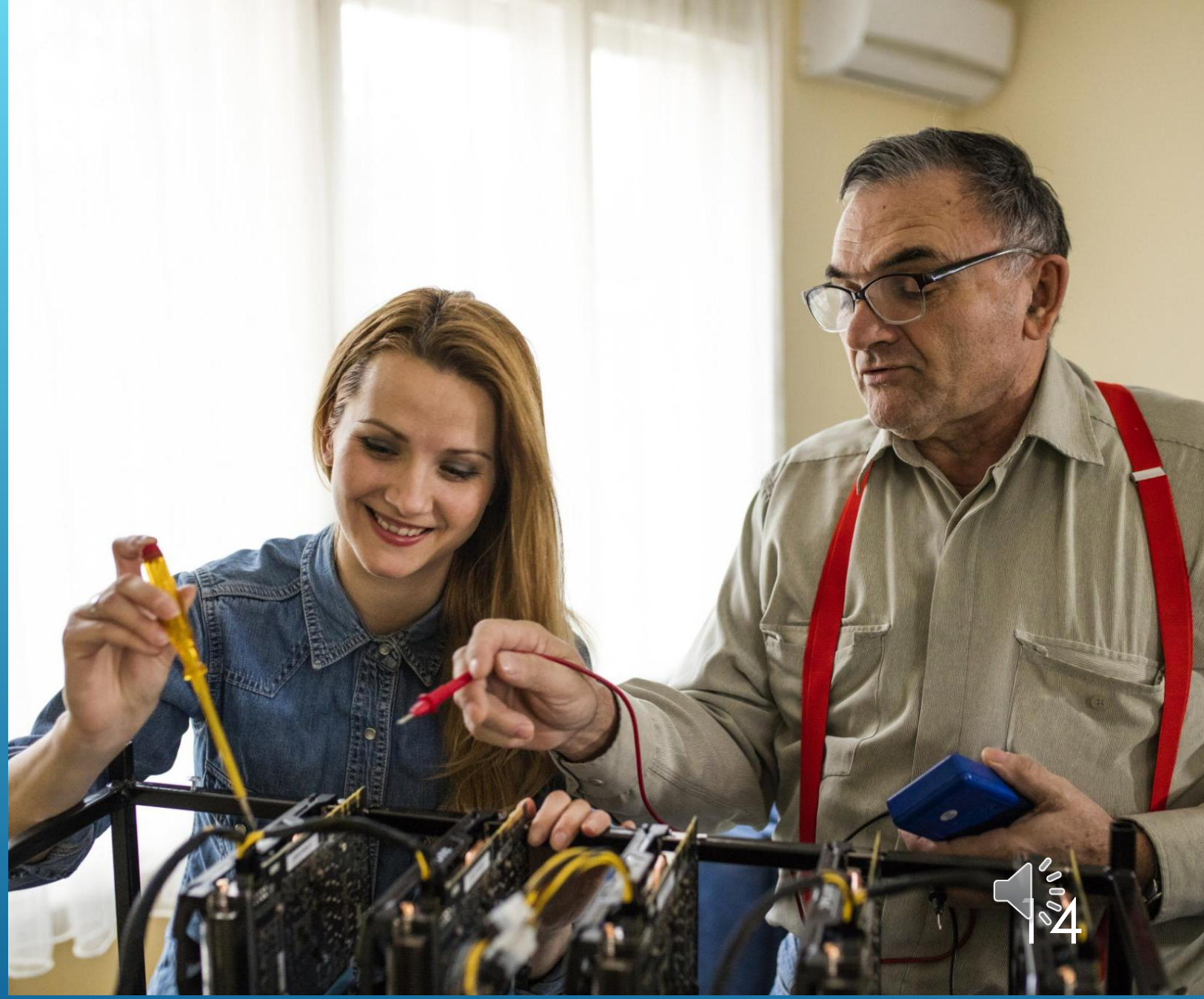
Mentorship and expert guidance

GoFundMe Support

BotBuilders creates a **GoFundMe** campaign for your student and provides the materials for parents to promote their personal campaign for getting their own StarterBot.

Coaching and Encouragement

Mentors offer essential technical guidance to help students understand complex concepts and tools and encourage students to overcome difficulties and build confidence.



Access to learning materials and tools

[FIRST® Resource Library]

Tutorial Resources

Students utilize tutorials to gain step-by-step guidance for learning new concepts and skills effectively.

Design Documentation

Design documents provide structured information to support project planning and development.

Programming Guides

Programming guides help students understand coding principles and best practices for software development.

Learning Tools

Various tools aid students in hands-on project development and enhance learning efficiency.

Building an inclusive and supportive community around the FIRST Tech Challenges

Promoting Diversity

The group emphasizes the importance of diversity to enrich community experiences and perspectives.

Creating Inclusivity

An inclusive environment ensures all students feel welcomed, respected, and motivated to participate fully.

Fostering Motivation

Encouraging student contributions builds motivation and a sense of belonging within the community.

NEXT STEPS

- **Be part of the journey.**

  Help us reach our first $1,000 goal for The Prototype Sprint

  Contribute to BotBuilder StarterBot Prototype Sprint

- **Join us on Facebook:**

  BotBuilders: Student Robotics & STEM Learning

- **Help promote your student's Campaign:**

  You don't need to know anything about GoFundMe setup or design. We'll prepare each student's page for you — complete with their story, photos, program details, and fundraising goal (about $1,000 for the StarterBot Kit and REV Robot Controller).

THANK YOU!

David Manley

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GoFundMe: The BotBuilder StarterBot Prototype Sprint

Facebook Group: BotBuilders