

25 Classroom Projects

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The STEAM+C Classroom

Inside the Book

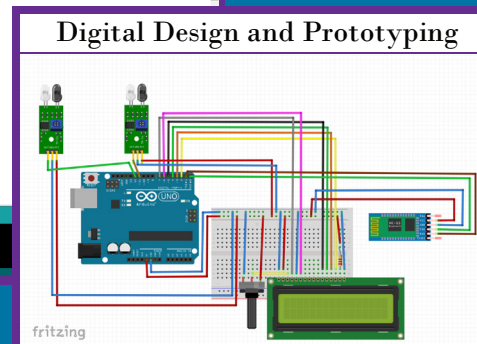
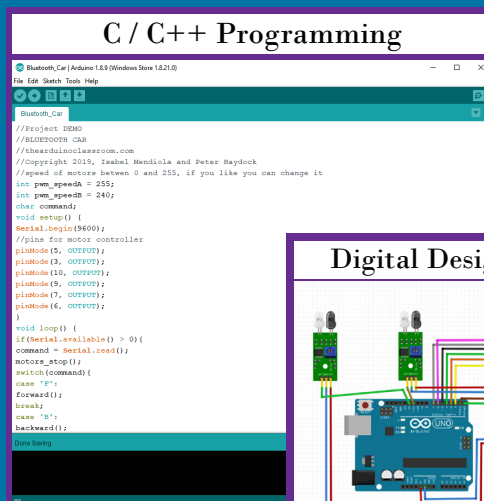
- 25 Classroom Tested Projects
- Wi-Fi®, Bluetooth®, GPS, & Cellular
- Standards Alignments
- 100+ Project Extensions
- Materials Lists
- Tested Code
- Technical Diagrams and Photos
- Assessments

Integrates

- STEAM
- C / C++ Programming Basics
- Digital Prototyping
- Engineering Design
- Project Management

Free with Website Registration

- Project Updates
- Community Ideas
- Project Submissions



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www.thesteamplusclassroom.org

Premium Website Membership

- Videos of Projects
- Classroom Presentations
- Images, Diagrams, and Code



Integrating programming, design,
and prototyping into Science,
Technology, Engineering, Arts, and
Math (STEAM) classrooms with
Arduino® IoT based projects.

| Projects Overview | | | | | | | | | | | |
|-------------------------------|--------------------------|--|--------------|---------|------|-----------|---------|------------|-------------|-------------|------|
| | Project | Time to Complete (hr:min) Project / Extensions | Difficulty | Science | | | | Technology | Engineering | Allied Arts | Math |
| | | | | Earth | Life | Chemistry | Physics | | | | |
| Section 1 Bluetooth® | Voice Controlled Lights | 0:45 /0:45 | Intermediate | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Remote LCD | 1:00 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Text an LED Matrix | 1:00 /0:45 | Intermediate | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Speedometer | 1:15 /0:45 | Intermediate | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Robot | 1:30 /0:45 | Intermediate | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Robotic Arm | 1:30 /0:45 | Advanced | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Voice Controlled Car | 1:45 /0:45 | Advanced | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Drone | 1:45 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Health Monitor | 1:30 /1:00 | Advanced | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Home Control | 1:00 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Environmental Monitoring | 1:45 /1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Section 2 Wi-Fi® | Remote Home Control | 1:00 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | Water Monitoring | 1:30 /1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | Text the LED | 1:30 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Smoke & Gas Notifier | 1:30 /1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | Fido Feeder | 1:30 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Robotic Hand | 1:30 / 1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Food Quality | 1:30 /1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Trash Sorter | 2;00 /1:00 | Advanced | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Weather Station | 1:45 /1:00 | Advanced | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Section 3 Cellular and GPS | Fire Alarm | 1:30 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| | Location Data | 1:30 /0:45 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Agriculture | 2:00 /1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | SMS and Calls | 1:30 /1:00 | Advanced | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Gas Leak | 1:30 /1:00 | Intermediate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |

✓ = Full match to standards ✓ = Supports standards with extensions ✓ = Supports standards with problem