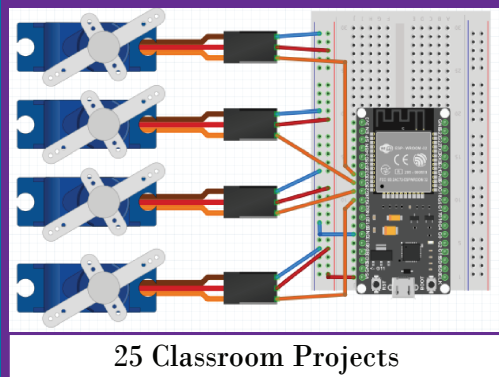


Internet of Things



25 Classroom Projects

The STEAM+C Classroom

Inside the Book

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

Integrates

- STEAM
- C / C++, HTML, CSS Programming
- Digital Prototyping
- Engineering Design
- Project Management

Free with Website Registration

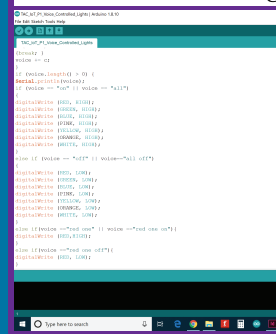
- Project Updates
- Community Ideas
- Project Submissions

Premium Website Membership

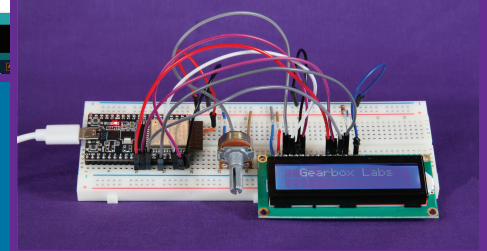
- Videos of Projects
- Classroom Presentations
- Images, Diagrams, and Code



C / C++ Programming



Digital Design and Prototyping



María Isabel
Mendiola Ramírez
and
Peter G. Haydock

www.thearduinoclassroom.com

Integrating programming, design,
and prototyping into Science,
Technology, Engineering, Arts,
and Math (STEAM) classrooms
with ESP32 microcontroller
IoT projects.

Projects Overview												
	Project	Page	Time to Complete (hr:min) Project / Extensions	Difficulty	Science				Technology	Engineering	Allied Arts	Math
					Earth	Life	Chemistry	Physics				
Section 1 Bluetooth®	Voice Controlled Lights	24	1:00 /:30	Intermediate				✓	✓	✓	✓	✓
	Remote LCD	32	1:00 /:30	Intermediate				✓	✓	✓	✓	✓
	Text an LED Matrix	40	1:00 /:30	Intermediate				✓	✓	✓	✓	✓
	Classroom Counter	48	1:30 /1:30	Advanced		✓		✓	✓	✓		✓
	Robot	56	2:00 /1:30	Advanced		✓		✓	✓	✓	✓	✓
	Robotic Arm	64	1:30 /1:30	Advanced	✓	✓		✓	✓	✓	✓	✓
	Voice Controlled Car	72	2:00 /1:30	Advanced	✓	✓	✓	✓	✓	✓		✓
	Trash Sorter	80	1:30 /1:00	Advanced	✓	✓	✓	✓	✓	✓	✓	✓
	Home Control	88	1:30 /1:30	Intermediate	✓	✓		✓	✓	✓	✓	✓
Section 2 Wi-Fi®	Hotspots	104	:45 /:45	Starter	✓			✓	✓	✓	✓	✓
	Remote Home Control	110	1:30 /1:30	Intermediate	✓	✓		✓	✓	✓	✓	✓
	Health Monitor	118	1:30 /1:30	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	Environmental Monitoring	126	2:00 /1:00	Advanced	✓	✓	✓	✓	✓	✓	✓	✓
	Water Monitoring	134	2:00 /1:00	Advanced	✓	✓	✓	✓	✓	✓	✓	✓
	Matrix Art	142	1:00 /1:00	Intermediate	✓	✓		✓	✓	✓	✓	✓
	Atmospheric Monitoring	150	2:00 /1:00	Advanced	✓	✓	✓	✓	✓	✓	✓	✓
	Fido Feeder	158	1:30 /1:30	Intermediate		✓		✓	✓	✓	✓	✓
	Robotic Arm	166	2:00 /1:00	Advanced	✓	✓		✓	✓	✓	✓	✓
	Food Quality	174	1:30 /1:30	Advanced		✓	✓	✓	✓	✓	✓	✓
	Automated Greenhouse	182	2:00 /1:00	Advanced	✓	✓	✓	✓	✓	✓	✓	✓
Section 3 GPS	GPS Mapping	202	1:15 /1:30	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	GPS Reporting	210	1:15 /1:30	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	GPS Tracker	218	1:15 /1:30	Intermediate	✓			✓	✓	✓	✓	✓
	Speedometer	226	1:15 /1:30	Advanced	✓			✓	✓	✓	✓	✓
	Location Data	234	1:00 /1:30	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓

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