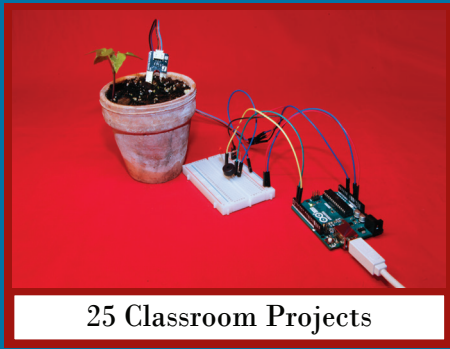


Integrated
STEAM
Edition



25 Classroom Projects

Published by Gearbox Labs, Inc.
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The ARDUINO® Classroom

Inside the Book

- 25 Classroom Tested Projects
- Standards Alignments
- 110+ 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

C / C++ Programming

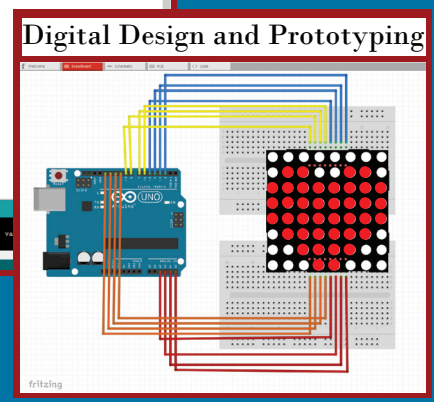
```

//Project 10
//LCD Counter using two Pushbuttons
//thearduinoclassroom.com
//Copyright 2019, Isabel Mendiola and Peter Haydock

#include <liquidCrystal.h> // Add the library for reading the LCD
liquidCrystal lcd(7,4,5,4,3,2); // Add digital microcontroller pins
const int Up_buttonPin = 8; // Pushbutton 2
const int Down_buttonPin = 9; // Pushbutton 1
int count = 0;

void setup()
{
  lcd.begin(16, 2); //Column and row of the LCD
  lcd.print("  and  counting"); //Type the message for the display
  pinMode(8, INPUT);
  pinMode(9, INPUT);
  digitalWrite(8, HIGH);
  digitalWrite(9, HIGH);
}

void loop()
{
  //the rest
}
  
```



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www.thearduinoclassroom.com

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® based 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 Building Blocks	UNO Heartbeat	18	0:15 /0:30	Starter		✓		✓	✓	✓	✓	✓
	Lighting Effects	24	0:45 /0:45	Starter		✓	✓	✓	✓	✓	✓	✓
	Buzz Me	32	0:30 /0:45	Starter		✓		✓	✓	✓	✓	✓
	Dimmer Switch	40	0:30 /0:45	Starter				✓	✓	✓	✓	✓
	Rainbow Light	48	0:45 /0:45	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
Section 2 Displays, Inputs, and Controls	Spin It Up	68	0:30 /0:45	Starter		✓		✓	✓	✓	✓	✓
	Count on Me	76	0:45 /0:45	Starter				✓	✓	✓	✓	✓
	LCD Billboard	84	0:45 /0:45	Intermediate				✓	✓	✓	✓	✓
	Lights On/ Lights Off	92	0:30 /0:45	Intermediate				✓	✓	✓	✓	✓
	Pushbutton Counting	100	0:45 /0:45	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	Music Maker	108	0:45 /0:45	Intermediate	✓			✓	✓	✓	✓	✓
	Calculator	116	1:00 /0:45	Advanced	✓			✓	✓	✓		✓
Section 3 Sensors	Night Light	128	0:30 /0:45	Starter	✓	✓		✓	✓	✓	✓	✓
	Sensing Jolts, Bumps, and Rattles	136	0:45 /0:45	Starter	✓	✓		✓	✓	✓	✓	✓
	Polychrome	144	0:45 /0:45	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	Digital Ruler	152	0:45 /0:45	Intermediate	✓	✓		✓	✓	✓	✓	✓
	Turbidity Sensor	160	0:45 /0:45	Intermediate	✓	✓		✓	✓	✓		✓
	My Heartbeat	168	0:30 /0:45	Intermediate		✓		✓	✓	✓	✓	✓
	pH Properties	176	0:45 /0:45	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	Soil Moisture	184	0:45 /0:45	Intermediate	✓	✓	✓	✓	✓	✓		✓
	Gas Sniffer	192	1:15 /0:45	Advanced	✓	✓	✓	✓	✓	✓		✓
Section 4 Combining Inputs and Outputs	Cool It!	202	1:15 /0:45	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓
	Emoji Me	210	1:15 /0:45	Advanced				✓	✓	✓	✓	✓
	Did You Hear Me?	218	1:15 /0:45	Intermediate	✓	✓		✓	✓	✓		✓
	Robot Race	226	2:00 /2:00	Advanced	✓	✓	✓	✓	✓	✓	✓	✓

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