Day	Topic	Focus	Home work	Notes
Day 1	Your first circuit	• Intro to Circuit and C++ • Arduino • Digital Signals • Metric Prefix	• Make 2 more LED blink in sequence • Can you make the 2 newly created LED blink simultaneously ?	• Syntax, Logic flow Variables, Functions, Comments • LED blink
Day 2	Programming multiple LED blink	• Functions • Conditional Statements (if/else)	• Use random() function to turn certain LED's blink (specific instruction will be given)	
Day 3	Spin the Wheel (YOUR FIRST GAME)	• Control flow statement (for loops) • Serial Communication	• Can you loop in reverse ? • Use random() function to switch direction at random interval	
Day 4	Ohm's law	• Current vs Voltage • Resistance • Multimeters and usage	• How much resistance is needed for LED with **3v** supply ? • How about **5v** ?	
Day 5	Programming push buttons	• Switches • Pull-up vs Pull-down resistor	• Can you think of a way to improve the button press ? Such that we don't need to hold down the button ?	Arduino button API digitalRead doesn't have a mechanism to wait for user input. So for basic usage we have a delay before the read then have to hold the button for the signal to register.
Day 6	Potentiometers & delay without blocking	• Analog Signals • Blocking vs Non-blocking operations	• Can you replace the previous LED blink with non-blocking ?	
Day 7	Programming LCD display	• Intro to Library import and usage.	• Explore the LiquidCrystal library and play around with it.	

Day 8	Whack A Mole Game	• Structure	• Finish up, play and have fun	• Code organization & reusability
Day 9	Polishing	No stones left unturned		Extra topics to learn, but not required: • Diodes • Capacitors • Inductors
Day 10	Simon Says Game	• Array		
Day 11	3D Printing (BONUS)	• Geometry		
Day 12	PCB printing (BONUS)	• Software usage and ordering		

Disclaimer: Depending on the student's speed, each day could take more or less than a session.