



Pilot Technical Section: Circuitry and Coding

I. Overview

The Circuitry and Coding section is a race to compose and program multiple circuits. This technical section is a pilot, and therefore it will not count toward each team's overall score.

II. Rules

- a. Each school may have one team consisting of no more than three students.
- b. Each team must supply their own computer, preloaded with the Arduino IDE. Each team is restricted to one computer.
- c. Each team will be provided with a SparkFun Inventor's Kit containing the necessary components, Arduino microcontroller, and accessories. This is the same kit that schools received at the two-day build training event. Teams may not provide any of their own additional materials.
SparkFun Inventor's Kit information: (<https://www.sparkfun.com/products/15267>)
- d. Each team may prepare a PDF document of notes, such as circuit diagrams and code snippets. Teams may access this document on their computer, as well as have their own hard copies. The document is limited to two pages (or one two-sided page) and must be a PDF. Teams may not access any resources besides their PDF and any resources provided by the judges. Teams may have blank paper and writing implements for planning purposes.
- e. Each team will be provided with a list of separate circuitry and coding tasks. Each task will specify the expected outcomes, which may include component and/or serial monitor output. Neither a circuit diagram nor code will be provided. A task may include bonus tasks, which will require additional circuitry and/or code.

III. Rubric

The rubric will be provided at the competition, and will vary depending on the number and difficulty of the tasks and bonus tasks. Each successfully completed task

and bonus task will be worth a set number of points. Ties will be broken based on the time that each team's last task or bonus task was completed.

IV. Suggestions

- a. Teams should have completed every project in the SparkFun Inventor's Kit or have sufficient experience developing circuits and programming with the Arduino microcontroller. They should understand how the circuits work and how the code works.
- b. Teams should devise and complete their own small projects with the SparkFun Inventor's Kit, or similar Arduino starter kit.
- c. The PDF should have important code snippets that can be quickly copy-and-pasted into the Arduino IDE, and then modified.