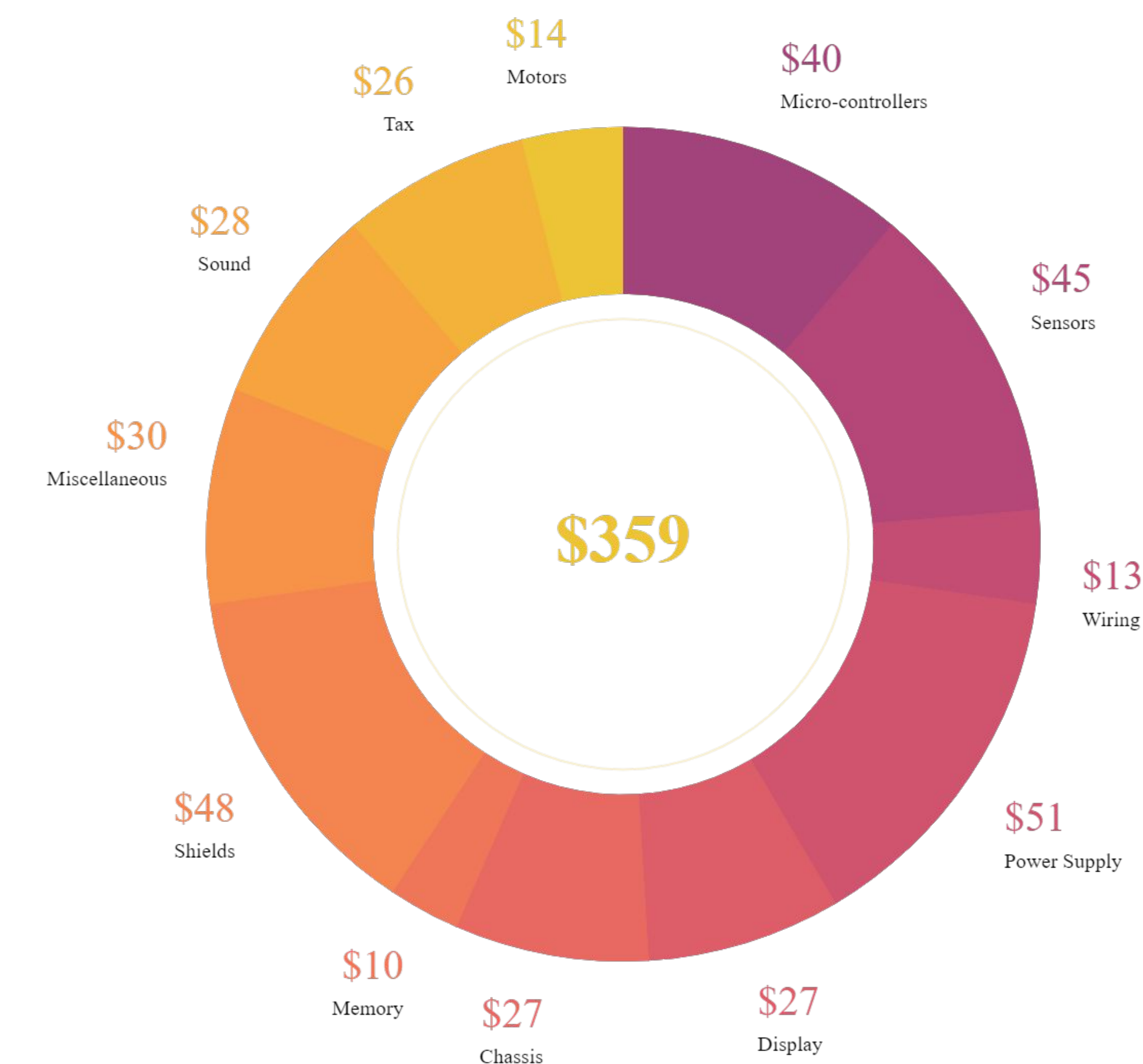


MakerKids is franchising and is in search for gadgets to display in their lobby that is appealing to new clients, while helping children build a positive relationship with technology.

**Requirements & Specifications:**  
Lobby toys must be small enough to put on a small shelf, about 8 x 8 x 8 inches. They also need to be fairly cheap and reproducible by the upcoming franchisees. They should be hackable and reprogrammable by their students, and the toys cannot be too loud or flashy, considering children on the autism spectrum.

## Total Combined Budget

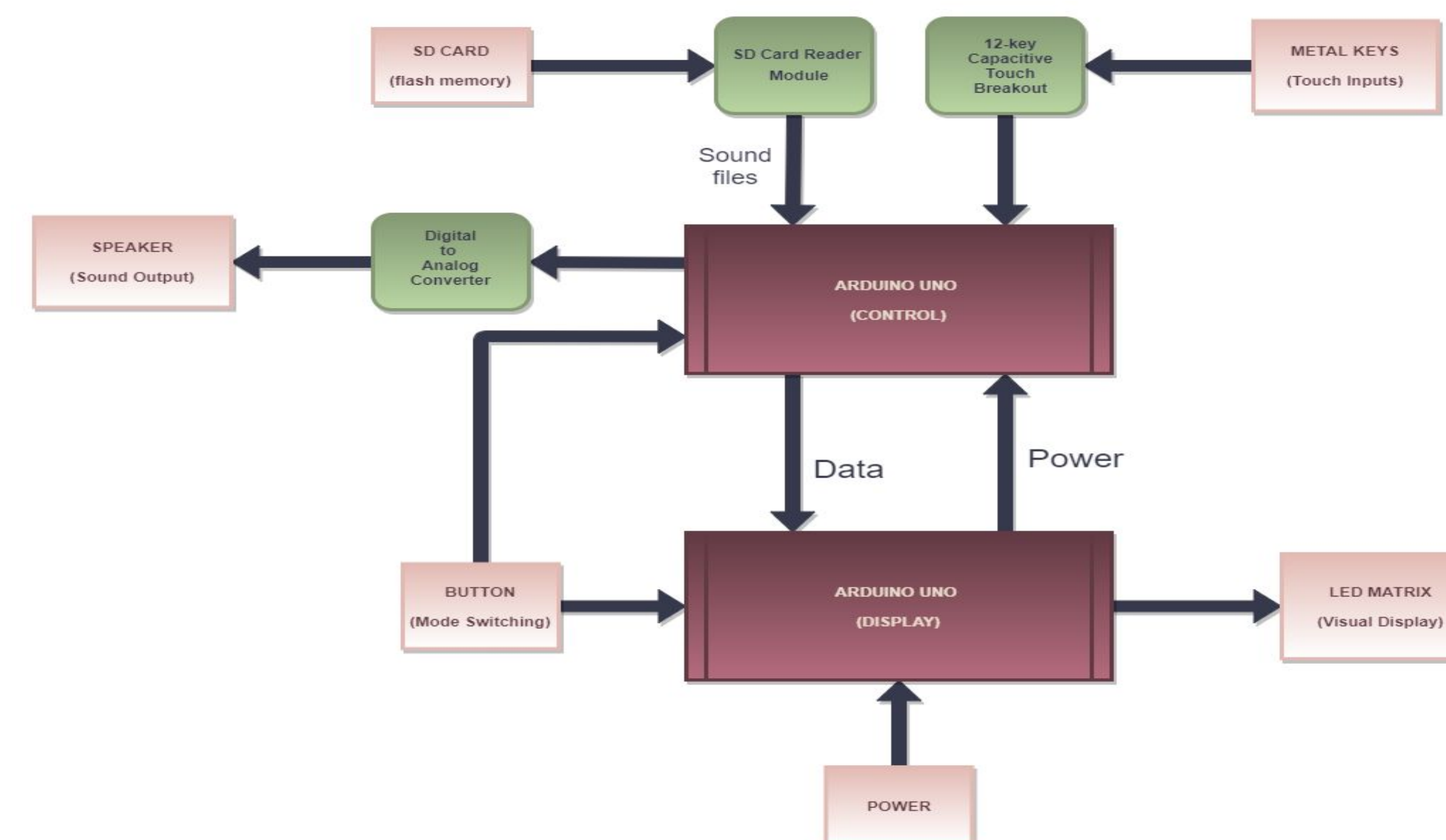


## TOUCHSYNTH

Touch Synth is a multi-functioning keyboard using capacitive touch sensors as the keys. It utilizes two Arduino Unos working together to help everything operate synchronously, alongside with a touch capacitive and SD Card Reader breakouts. It will feature both an audio and visual output with the use of an external speaker and an LED Matrix. It will have three modes which it will operate in, Tune Generator, Drum Kit, and an Arpeggio, but is reprogrammable for an infinite amount of modes.



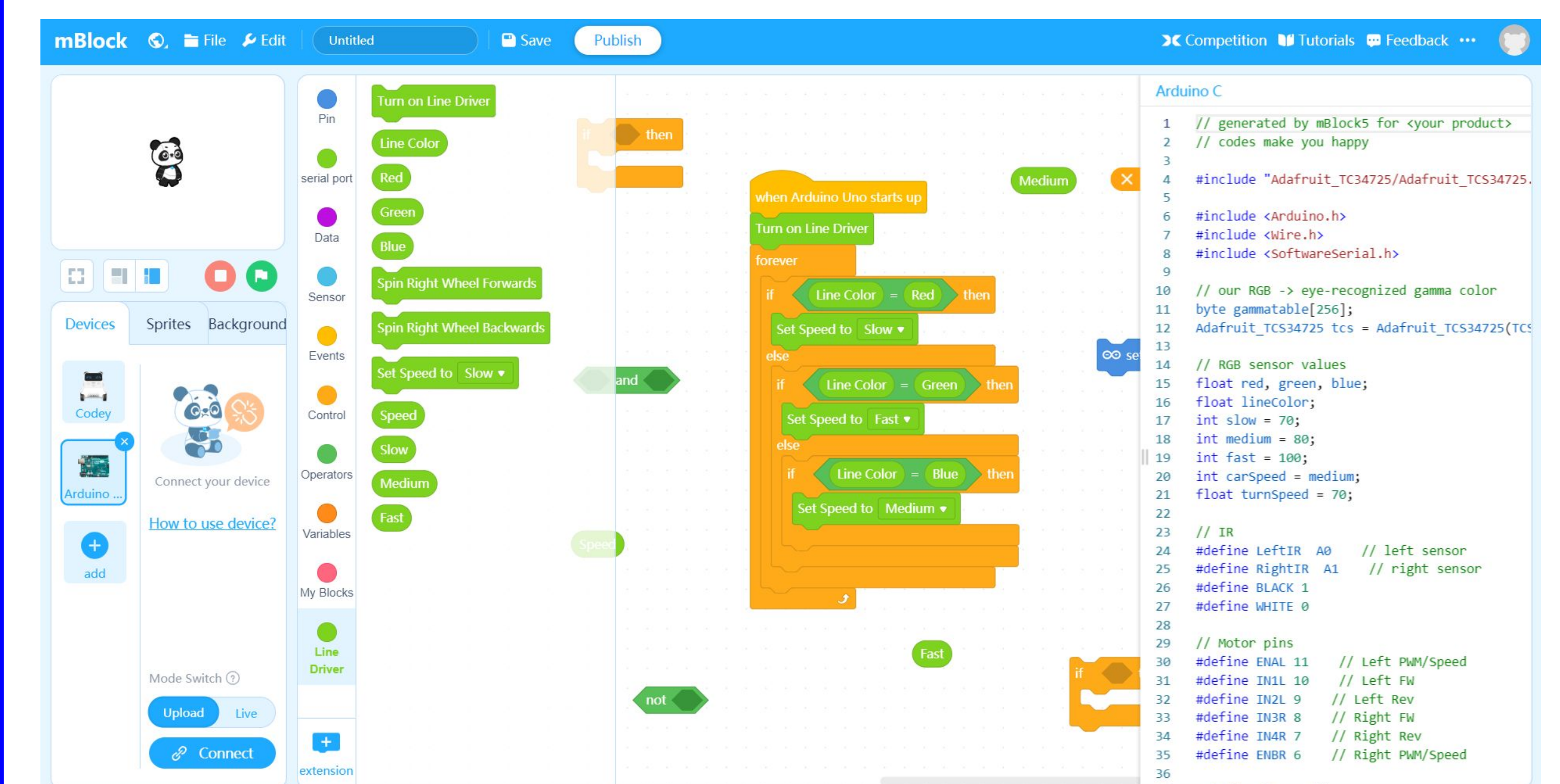
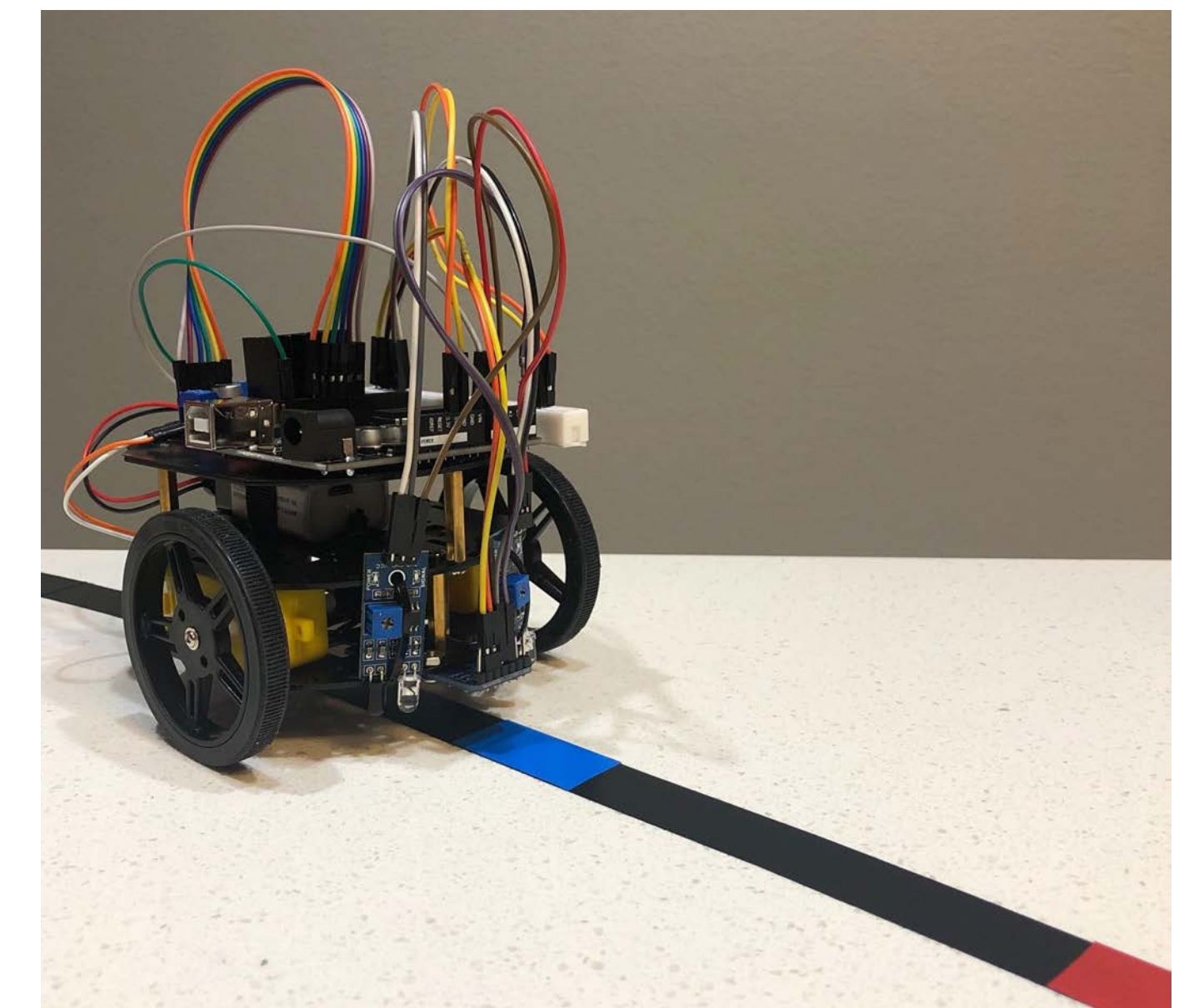
**Keyboard/Tune Generator** – When activating the capacitive touch, the Arduino then plays a certain tune or frequency, each at a different pitch from the others.  
**Drum Kit** – When activating the capacitive touch, the Arduino then utilizes a .wav file to be played, imitating sounds to make a drum.  
**Arpeggio** - When activating the capacitive touch, the Arduino then plays a repetitive cycle through the harmonic chord continuously.



See our projects at:  
[sites.google.com/view/maker-kids/home](https://sites.google.com/view/maker-kids/home)

## LINE DRIVER

**The Bot:** Line Driver is an autonomous Arduino-controlled car that detects and follows a user created line using IR sensors. It also incorporates an RGB sensor so that when it sees a Red, Green, or Blue line, it can perform a number of actions. The twin IR sensors are also shown on both sides of the RGB sensor.



**The App:** This robot will be totally controlled by the kids at MakerKids. It utilizes mBlock, an Arduino-compatible version of Scratch, to incorporate a drag and drop style of coding the robot. We provide custom blocks that handle all of the heavy lifting, so the kids can design a course for the robot to drive on and learn how to code in a high level block design.

