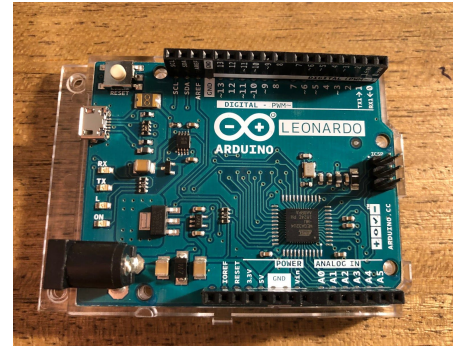


How Does it Work?

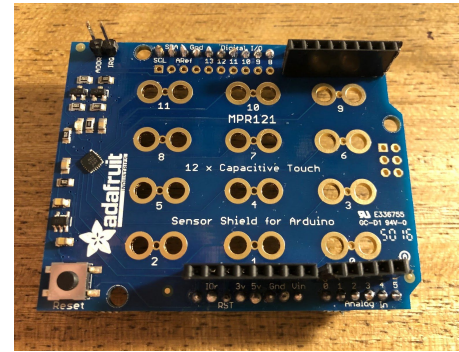
The Fruit Drums are built using an Arduino Leonardo, which is part of a huge set of small and affordable microcontrollers that make electronics accessible to everyone. By using the C++ programming language to send code from the open-source Arduino IDE to the Arduino Leonardo, we can create an endless variety of exciting projects using various hardware components in circuit with the Arduino.

For this project, a capacitive touch “Hat”, or add-on circuit board, is used to give the Leonardo the ability to detect when we touch the fruit. What is capacitive touch? It’s the same technology used in our phone touchscreens, and it works by running an electric field through an electrode, or object that conducts electricity. When another object that conducts electricity (i.e. our fingers) touches the electrode, it causes a change in the electric field whose origin can be detected by the Arduino. By writing code that responds to these changes, it’s possible to use MIDI (Musical Instrument Digital Interface) to tell a synth software to play a sound every time a touch is detected. Since most fruits contain citric acid (an electrolyte), they make excellent electrodes. Thus: fruit drums!

Arduino Leonardo



MPR121 Capacitive Touch Hat



Electrode



Result: Touch -> MIDI -> Music

