11.4: More Analog Input

Arduinos

Computer Science Honors

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In the Grove kits, today we are going to see how different analog input devices work. Please find the following:

1. Touch sensor.

2. Sound sensor.

3. Magnetic switch. (For this one you need a magnet, see me).

4. Temperature sensor.

5. Light sensor.

The goal of this activity is to understand how these input devices work. Fill in the table below for each device.

**Definitions:**

* Reading: The number returned by the device to your code.
* Analog: The reading is a number that varies continuously, or smoothly. You can make it slightly higher or slightly lower. For example, the rotary angle sensor is analog.
* Digital: Only two possible values: 0 or 1. For example, the button is digital.

| Device | Physically, how do you change the reading? When is the reading high? When is it low? Explain. | Min value | Max value | Analog (A) or Digital (D)? |
| --- | --- | --- | --- | --- |
| Touch sensor | The sensor returns 1 when something touches the touch sensor and in all other cases it returns 0. | 0 | 1 | D |
| Sound sensor | The louder of a sound it receives, the larger the value it returns will be. | 0 | 0.6422 | A |
| Magnetic switch | When exposed to a magnetic field large enough to trigger the switch, the switch returns 1, in all other cases it returns 0. | 0 | 1 | D |
| Temperature Sensor | The hotter the temperature it detects, the larger value it will return. | 0.4917 | 0.5425 | A |
| Light Sensor | The more light is exposed to it the larger the value it returns will be. | 0 | 0.7566 | A |