



# Thinker1 Potentiometer

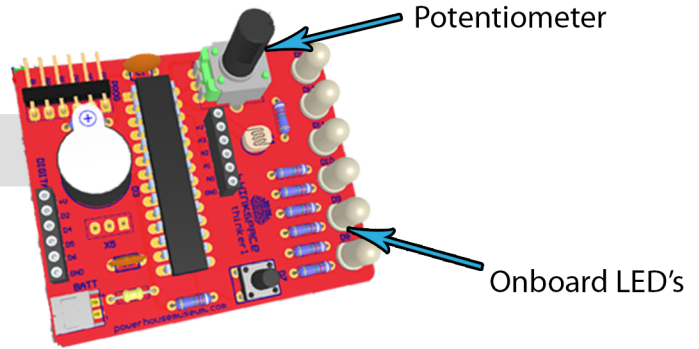
Activity Two



## What are we doing?

We will use the potentiometer to control the brightness of an LED.

## What parts of the board will you be using?



## What files will we be using?



## Instructions

### Step 1

Open the file:  Potentiometer2.ino

We are going to use PWM (or *Pulse Width Modulation*) to send varying amounts of power to the LED in order to change it's brightness.

Not all Arduino pins can be used to send PWM signals , most boards have a few dedicated digital PWM outputs.

On the thinker1 board, pins 9, 10 and 11 are set up with LEDs that use PWM.

### Step 2

Look for the comment `//map the values for PWM` and insert this code underneath;

```
value = map(value, 0, 1023, 0, 254);
```

This will convert our potentiometer values, which have a range of 0~1023 to PWM friendly values, using a range of 0~254.

### Step 3

Look for the comment `//write the value to the LED` and insert this code underneath;

```
analogWrite(led1Pin, value);
```

This will send our value to the LED, now try turning the potentiometer, you should see the brightness of the LED change in response.

## Program Logic

