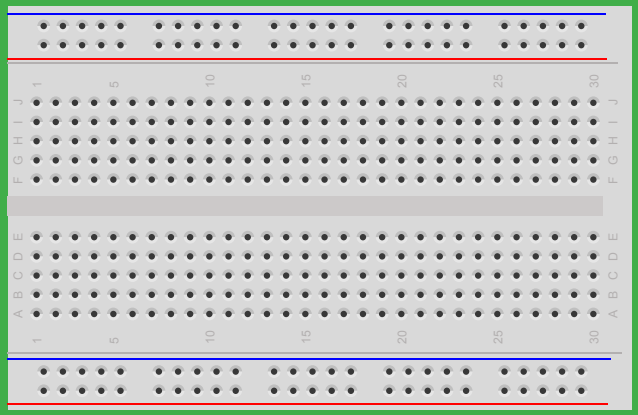
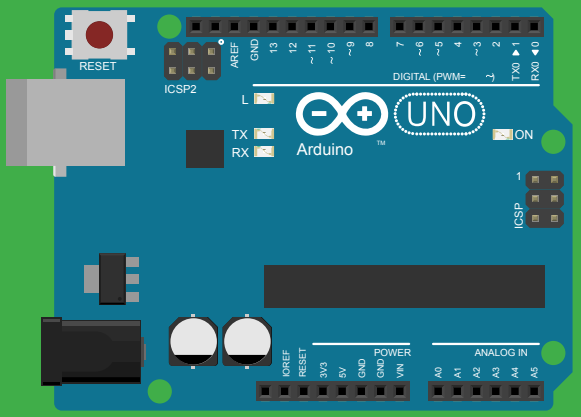
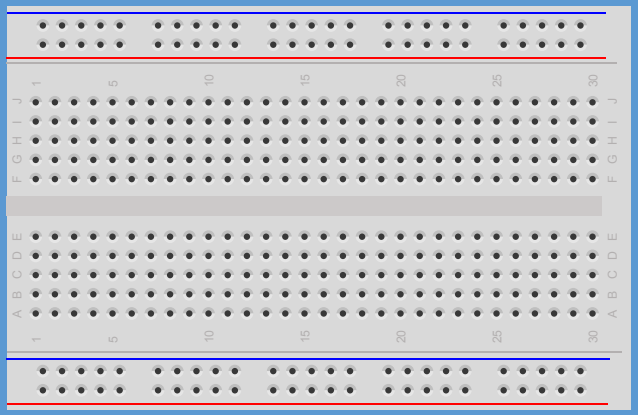
Part 1: Wire Up the Controllers

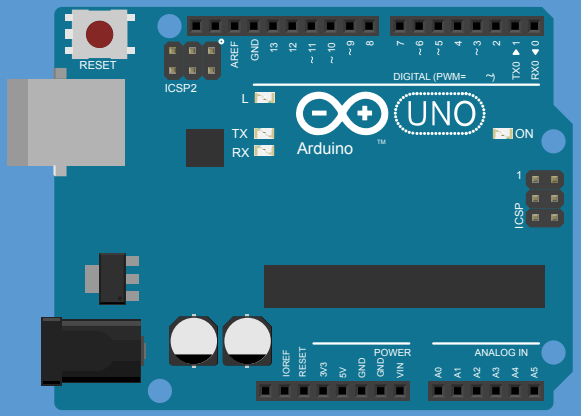




Intro: Explore Arduino

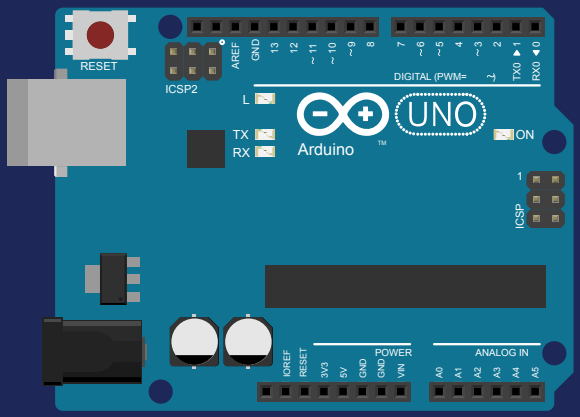
First Things First! Lets Learn about our parts.





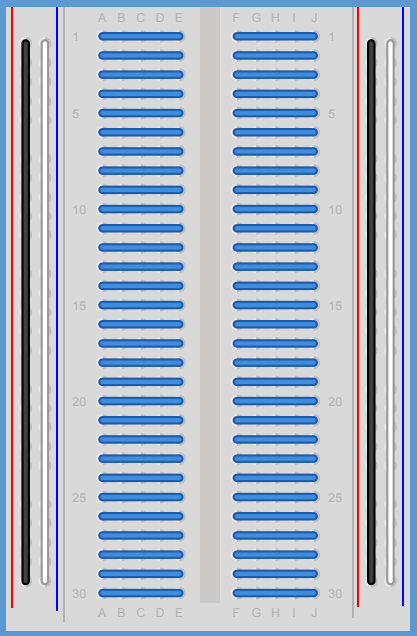
Included in your kit is an arduino, a breadboard, a push button and two joy-stick controllers

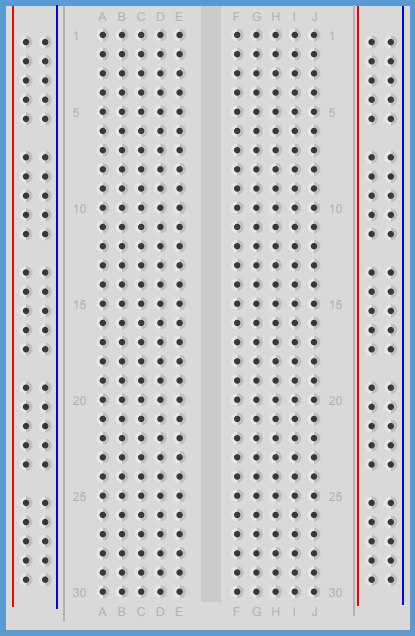
Whats An Arduino?



An arduino is a micro-controller, which is basically a very simple computer. We are able to receive information and send information via this board to many other components. We use a language called Arduino C, to communicate between the computer and the other components.

Whats a BreadBoard?





Breadboards are a very easy way for us to make mess-less circuits and quick micro-electronic projects. The eletricity will flow through every breadboard in the same way. The diagram above shows that on the sides the electricity will flow down and in the middle of the breadboard it flows across.

Whats this other stuff?

Included in your project kit are two arduino joystick controllers. A push button. And a few jumperwires. Each jumperwire is labeled. The joysticks take in power as well as put out information on how a user moves the joystick.

What's the plan, stan?

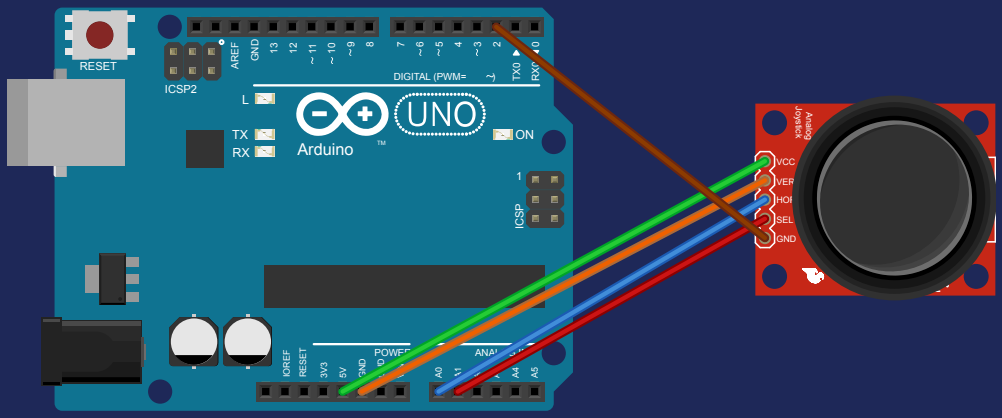
Our overall plan for this leg of the project is to properly wire up your controllers to receive power and send information to your computer.

First you will create a test set up to get information about each controller.

second you will wire up both controllers and test how they interface with your computer.

Thrid you will make some edits to the code and see how it works with a test 2 player game.

First, Test we must.



First WIre up one of your controllers with the set up above!

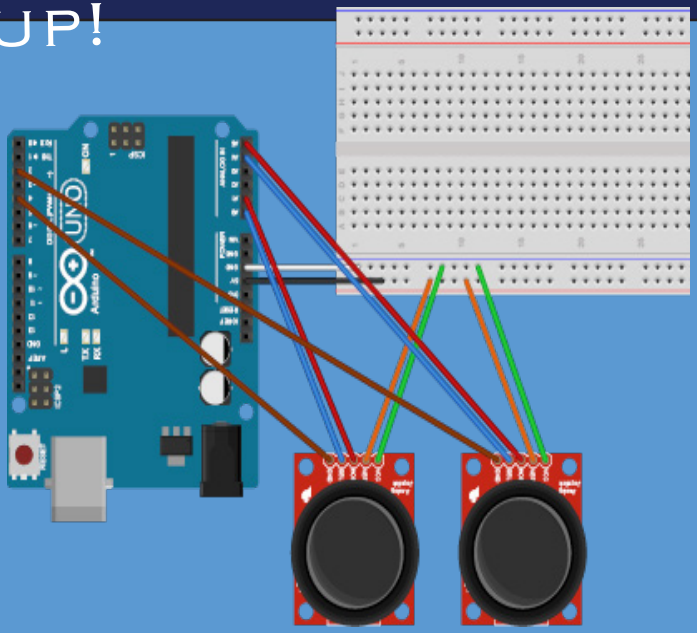
Next flash the arduino witth the:

test_control.ino file

You'll notice in the .ino file that there are ino statments where you need to edit your code!

Repeat this step for P1's & P2's controller

Wire it up!



Next wire up both controllers with the following set up!

Flash the arduino with the final_control.ino file.Run the test_processing.pde file.

This test file will register all movement of the controller as the space bar. Allowing us to test if we have properly set up our controllers. Try to play the game at this link by Moving up & down on both controllers.

Test using a two player game

Lets Talk a little bit about our processing code:

```
switch(KeyString){
    case "UPS":
     Arduino.keyPress(KeyEvent.VK_SPACE);
     Arduino.keyRelease(KeyEvent.VK_SPACE);
     break;
    case "UPF":
     Arduino.keyPress(KeyEvent.VK_SPACE);
     Arduino.keyRelease(KeyEvent.VK_SPACE);
     break;
    case "DOWNS":
     Arduino.keyPress(KeyEvent.VK_SPACE);
     Arduino.keyRelease(KeyEvent.VK_SPACE);
     break;
    case "DOWNF":
     Arduino.keyPress(KeyEvent.VK_SPACE);
     Arduino.keyRelease(KeyEvent.VK_SPACE);
     break;
  }
```

For testing purposes, every move of the controller is set to the space bar. But now we are going to assign each output from the arduino controllers to a unique key. For P1, we will use the up & Down Arrow. For p2, we will use the a & z keys. Take note of how the statment changed on the next page to accomplish that.

Test out our new processing file!

```
switch(KeyString){
 case "UPS":
  if(CString == '1'){
   Arduino.keyPress(KeyEvent.VK_UP);
   Arduino.keyRelease(KeyEvent.VK_UP);
  }
  else{
   Arduino.keyPress(KeyEvent.VK_A);
   Arduino.keyRelease(KeyEvent.VK_A);
  }
  break;
```

For testing purposes, every move of the controller was set to the space bar. But now what we are going to do is assign each output from the arduino to a unique key. For P1, we will use the up & Down Arrow. For p2, we will use the a & z keys. Take note of how the statment changed on the next page to accomplish that.

If everything went smoothly, please move on to part 2!