MAKE AN ARCADE CONTROLLER

CONSTRUCTION AND CODING INSTRUCTIONS

GETTING STARTED

- To get started, download out ThinkerShield quick-start guide at

    https://maas.museum/app/uploads/2015/05/GetOnWithIt-ONLINE-Dec15.pdf

- Follow along up to the end of the Get.Connected chapter, so we know that your Arduino and ThinkerShield is connected to your PC!

- Your Arduino is a Leonardo

- Once setup, let's finish the controller

WIRING BUTTONS

- Buttons connect to the D2, D4, D5, and D6 pins on the ThinkerShield
  - Connect an alligator clip from a pin to the NO pin on the button

- Ground wire can be daisy-chained between all the buttons
  - Connect an alligator clip from GND on the ThinkerShield to the COM pin on a button, then from there to each other COM pin in a chain
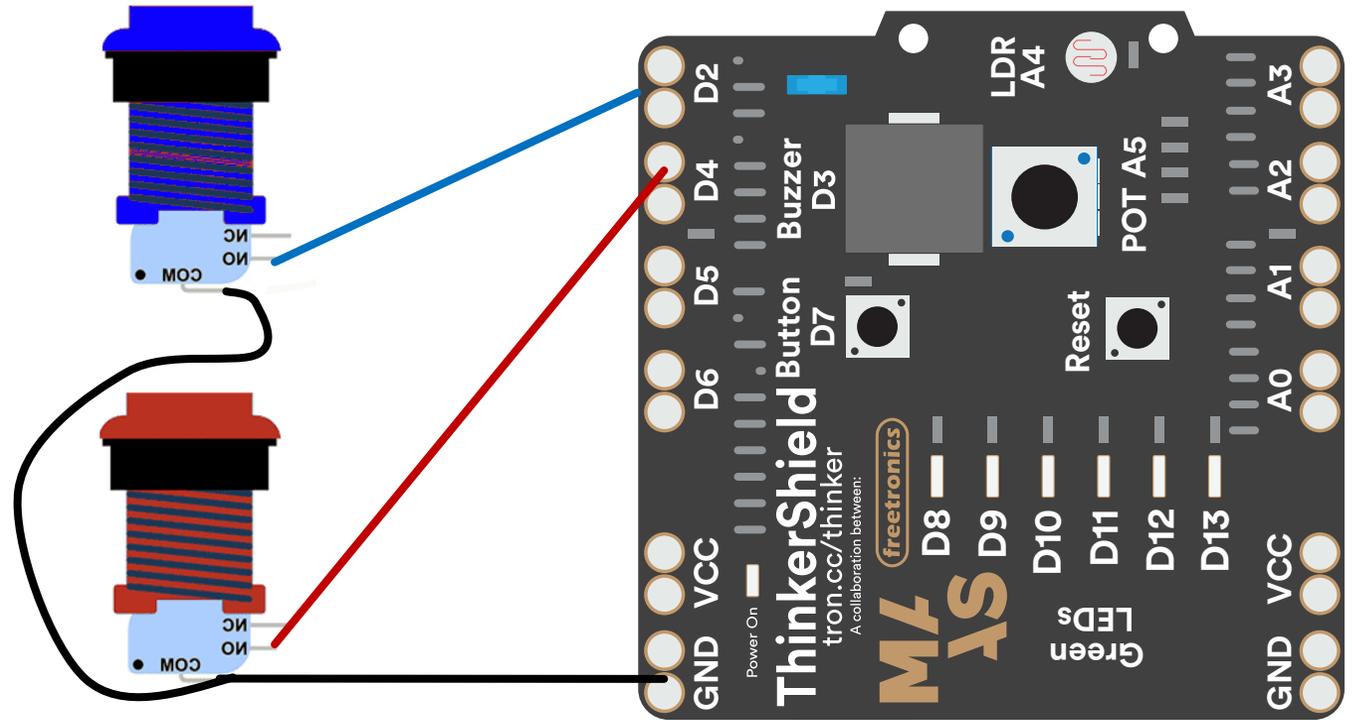
WIRING JOYSTICK
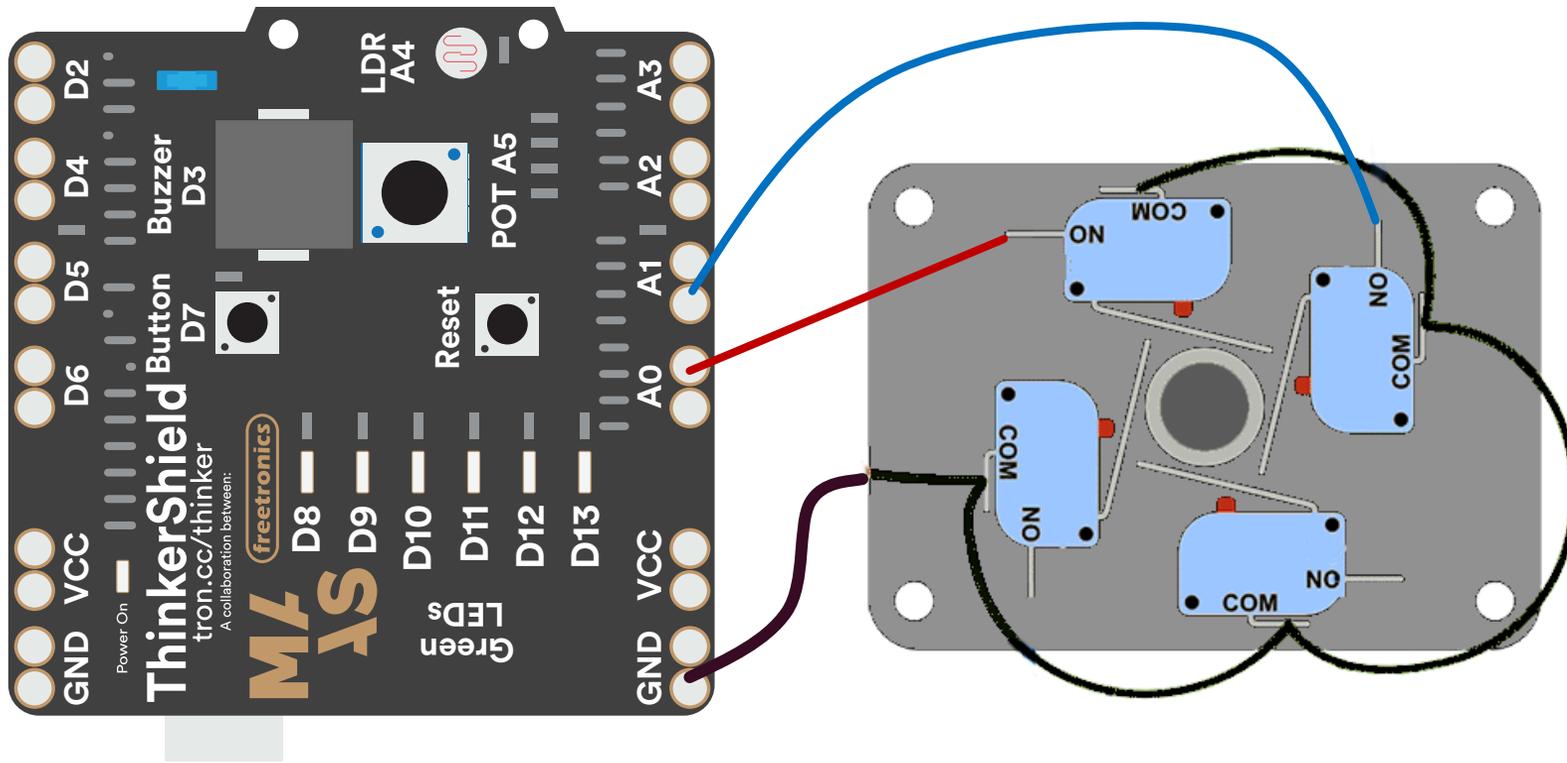
- Joystick directions connect to the A0, A1, A2, and A3 pins on the ThinkerShield
  - Connect an alligator clip from a pin to the NO pin on the joystick directions

- Ground wire can be daisy-chained between all the joystick directions
  - Connect an alligator clip from GND on the ThinkerShield to the COM pin on a joystick direction, then from there to each other COM pin in a chain

CODE

■ Download the ArcadeController.ino code from

http://thinkspace.powerhousemuseum.com/studentwork/ArcadeController/ArcadeController.ino

- Open the code in Arduino and select the Board and Port as explained in the Get.(On).With.It book
- Upload the code to your Arduino with the Upload button
- Depending on how you wired your buttons, your code might not work perfectly out-of-the-box! So we might need to change some things.
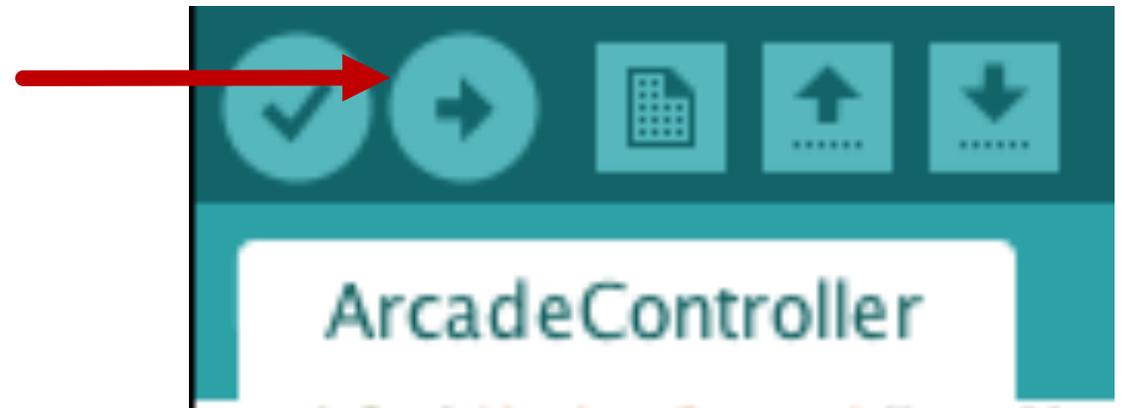
CODE

- After uploading the code, open a blank text document and push the buttons to see which one makes which letter – remember which!
- The top of the code shows which buttons are connected to which pins

```
int btn1 = 2;
int btn2 = 4;
int btn3 = 5;
int btn4 = 6;

int joy1 = A0;
int joy2 = A1;
int joy3 = A2;
int joy4 = A3;
```

- Scroll down to line 29, here you can see where we check if button 1 is pushed
  - If the button is LOW (pushed down) we need to press a key
  - Else, we need to release a key
  - Here we can change what key we press and release depending on what we want our button to do

```
// check button 1
if (digitalRead(btn1) == LOW)
{
    // Change the key here for the button to do something different!
    Keyboard.press('a');
}
else
{
    Keyboard.release('a');
}
```

CODE

- Scroll down to line 71, here you can see where we check if the joystick is directed up
    - If the joystick is LOW (pushed down) we need to press a key
    - Else, we need to release a key
    - Here we can change what key we press and release depending on what we want our joystick to do

```
// check joystick 1
if (digitalRead(joy1) == LOW)
{
  // Change the key here for the joystick to do something different!
  Keyboard.press(KEY_UP_ARROW);
}
else
{
  // Change the key here for the joystick to do something different!
  Keyboard.release(KEY_UP_ARROW);
}
```

THAT'S IT!

- That's it! Play around with the code to change which button/joystick presses and releases each key

- Your Arduino and ThinkerShield is much more powerful than just being an arcade controller, so have a look through the Get.(On).With.It book and to get the most out of your ThinkerShield!