

Activity 4 : Having Fun with Arduino

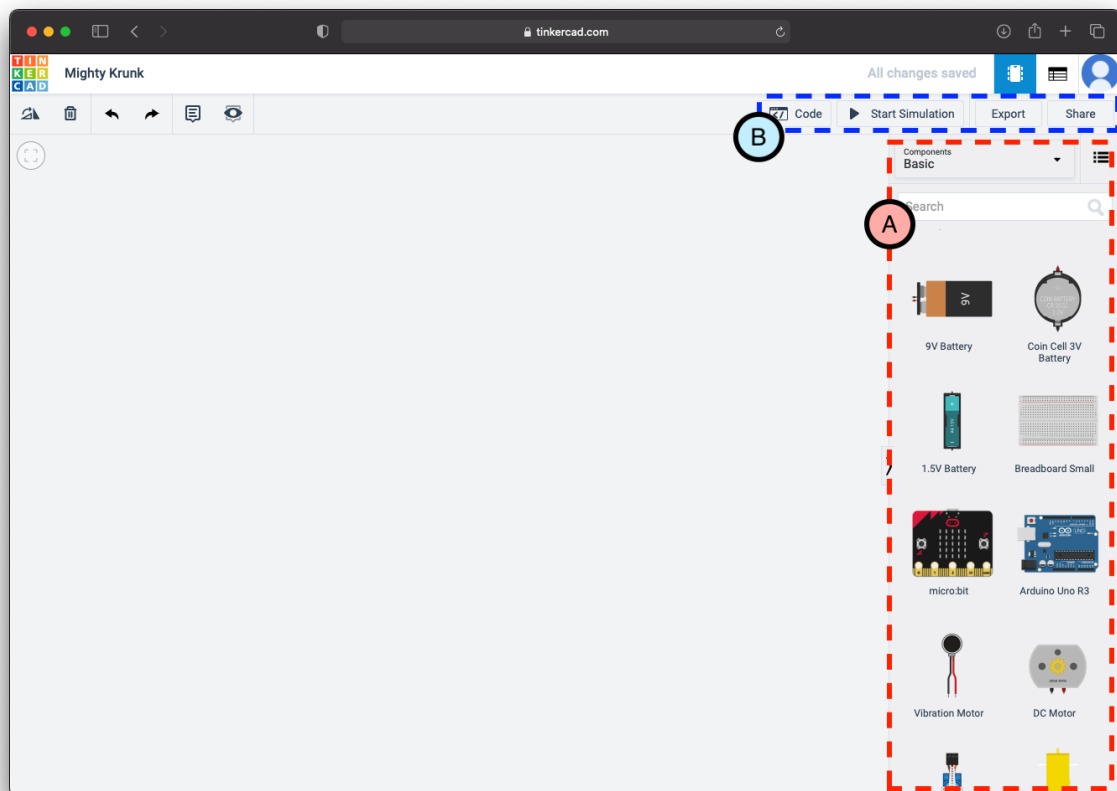
Group No : 03

Group Member :

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2. Sirapop chaddaeng
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Part 0 : Preparation

Go to the url <https://www.tinkercad.com/>. You will need to register (or log in with Facebook/Google); After logging in, quit the demo project and choose the “Circuits” tab on the side bar then create a new circuit.



On the left hand side toolbar, you will find (A) many components, for example, resistors, capacitors, LEDs and more. You can also control your circuit simulation with tools in (B). You can also click “Share” to perform **live-editing** with your group.

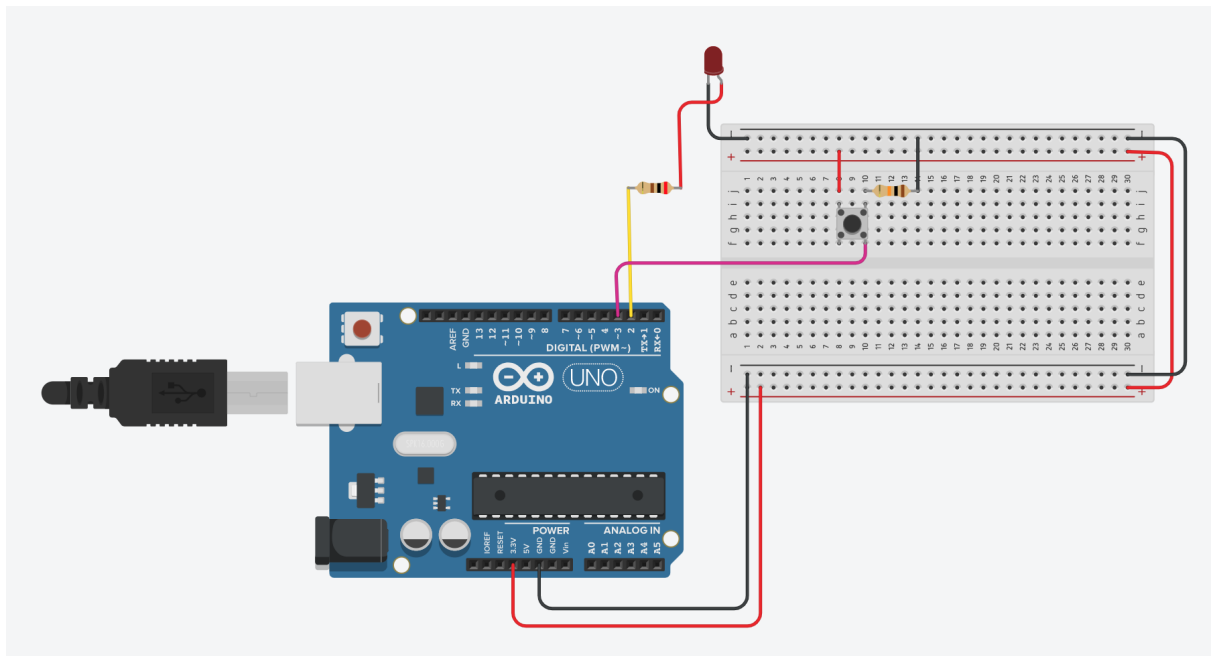
Drag and drop the following items to your workspace.

- 1 Breadboard
- 1 Arduino UNO
- 2 resistors
- 1 LED
- 1 push button
- 1 oscilloscope

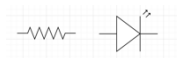
Answer the questions in the box given and submit this file (**.pdf format**) to myCourseVille.

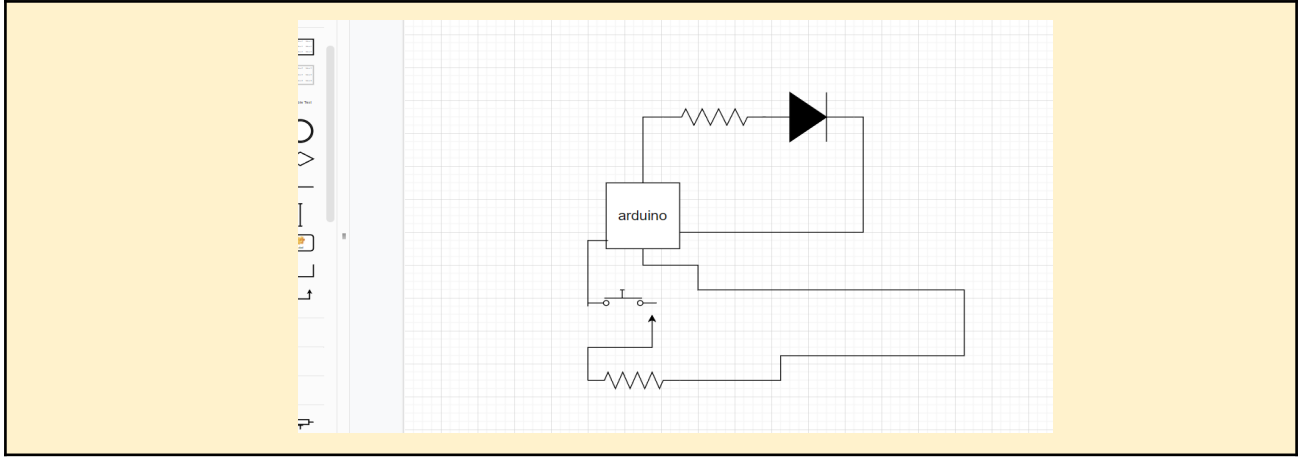
Part 1 : Basic circuit and basic Arduino

Connect the circuit to the protoboard as shown in the figure. You can wiring by clicking and dragging between the devices you want to connect.



Draw the electrical circuit, use the electronics devices notation such as . You can use draw.io on google drive to draw the circuit.





Try this code to see if your circuit is correct or not. You can **cut-and-paste** the code below.

```
int ledpin = 2;
int button = 3;
int buttonState = 0;

void setup()
{
  pinMode(ledpin, OUTPUT);
  pinMode(button, INPUT);
}

void loop()
{
  buttonState = digitalRead(button);
  if(buttonState == 1){
    digitalWrite(ledpin, HIGH);
  }
  if(buttonState == 0){
    digitalWrite(ledpin, LOW);
  }
}
```

Explain what the code above does?

If we press the button the light will up, then if we release it will turn down

Write Arduino code to do the following task. Toggle the LED light when pushing the button. For example: 1) LED on -> push button -> LED off, 2) LED off -> push button -> LED on. Put the code in the answer box.

```
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int button = 3;
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void setup()
{
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  pinMode(button, INPUT);
}

void loop()
{
  buttonState = digitalRead(button);
  if(buttonState == 1){
    digitalWrite(ledpin, HIGH);
  }
```

```
}  
if(buttonState == 0){  
    digitalWrite(ledpin, LOW);  
}  
}
```