Electronics Activity
Blinking Light Circuit

Materials:

A. Nano microcontroller board with USB cable
B. Breadboard
C. 3 LED diode lights
D. 4 jumper wires
E. 3 resistors
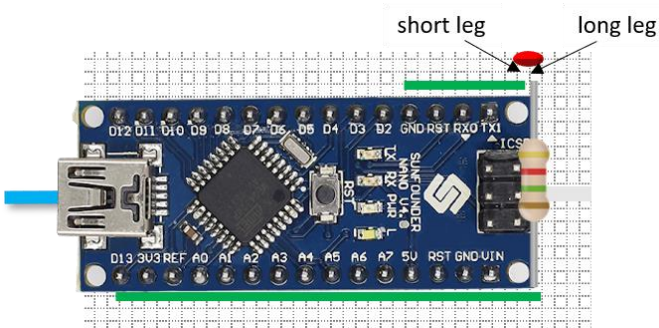
A	B	C	D

E

Product colors may vary

1 Challenge

Create a blinking light circuit.

1. Assemble your circuit like the one shown below. Be sure that ½ of your Nano is on one side of the breadboard and ½ is on the other.

short leg   long leg

2. Connect your Nano to your computer using the USB cable. You should see your light blink!

2 Challenge

Program a blinking light circuit.

1. Open the Arduino Online Editor:
   a. Visit https://create.arduino.cc and create a free account.

2. Download the Arduino create plugin:
   a. Click Getting Started -> Install Arduino Create Plugin
   b. Follow the onscreen instructions

3. Open the program to make the light blink:
   a. Click Arduino Web Editor -> Examples -> Basics -> Blink
   b. Find the line of code that reads `pinMode(LED_BUILTIN, OUTPUT);`

3 Challenge

c. Change LED_BUILTIN value to a number. Choose 2-12.

d. Move the wire from the D13 pin on your board to the pin that you changed in your code. Use the D2 pin if you chose 2, D3 for 3, etc.

e. Click the ✓ in the online editor to Verify your code and check for any errors.

f. If there are no errors, click the → to Upload your code to your board.

g. You should see your light blink!

h. To change the rate that the light blinks, change 1000 in delay(1000);

4 Challenge

i.   What value did you choose? What did your light do?

Remember to Verify and Upload your code after you make any changes.

5 Exploration

Create a circuit and program that will allow 3 lights to blink in sequence like a traffic light. Draw your diagram and/or enter your code below.