~ Arduino Starter Kit Questions ~

UNLESS INDICATED OTHERWISE, ALL BEGINNER GIRLS WILL BE REQUIRED TO COMPLETE THE FIRST 3 PROJECTS

- **PROJECT 1 COMPLETION GETS STUDENTS A SATCHEL**
- **PROJECT 2 AND UP COMPLETION GETS STUDENTS A NEOPIXEL PER PROJECT PRESENTATION**

Project 1 Questions

What voltage does Arduino provide in this circuit? Which pins are power (5V)? Which pins are ground (0V)?

What is the role of the resistor in this circuit? What would happen if you plugged in a resistor of higher/lower value?

DEMO: Series circuit (p.28): Why do you need to press both switches for the LED to light up?

DEMO: Parallel circuit (p.29): Why do you only need to press 1 button for the LED to light up?

What happens when you put 3-4 LEDs in series? parallel?

Project 2 Questions

What is the difference between setup and void loops?

What are the curly braces/brackets for?

What is int Switchstate? What does it do in your code?

Why do we only use pinMode() in setup()? [Do not need to execute pinMode more than once]

Why do we digitalRead() pin 2 in loop() instead of setup()?

DEMO: Ask the students to reconfigure input from pin 2 to pin 8 (and back, optional).

How do you add a comment in your code?

Explain the function of the conditional loops. What does each do?

DEMO: Ask students to reverse the if loop conditions.

What does delay(#) function do?

Project 3 Questions

contact natalia.baklitskaya@gmail.com with suggestions and questions

How many levels can an Arduino analog pin sense [1024]? What is its voltage sensing range [0V-5V]?

What does a serial monitor do? How do you pull it up? How do you use it in your code? [Serial.print, 9600 is baud rate – 9600 bits per second is the communication speed]

- If students are setting temperature manually, point out that there is a calibration example at the bottom of p.44
- Encourage students to draw the cover

Why do we use the analog pin for sensing instead of digital pin? Which analog pin are you using and what is it sensing?

What is a constant? Why are we using it in this case?

Why do we need to use float for baseline Temp?

- Make sure the students have grasped the concept for loop. Ask how it works and explain if needed. Mention that it can be substituted with a while loop

Why use a loop instead of writing out the code?

- Mention datasheets and how they can be used to look up specs
- Temp = (Voltage - .5) *100