Circuit Configuration

The LED is connected to digital output 9, this pin supports PWM (produces simulated analog output)

The pushbutton is connected to digital input 8

The potentiometer is connected to A0 (analog input 0)

TASKS

- The pushbutton toggles the output to the LED
    - Does nothing when pressed
    - Toggles state of LED when released (i.e. if the LED is on when released the LED turns off)
- The potentiometer controls the brightness of the LED
    - When the potentiometer is at its minimum value the voltage at pin 9 should be ~2 V
    - When the potentiometer is at its maximum value the voltage at pin 9 should be ~5 V
    - The voltage at pin 9 should vary linearly with the input of the potentiometer
- The maximum voltage that can be output to the LED is 5 V, this is represented by an analogWrite() value of 1023
- When the string "report" is sent to the Arduino via the serial monitor the Arduino should send back the current level of the LED, this value should be represented as a value from 0-100 with 0 being minimum and 100 being maximum

HINTS

- Spend some time looking into the analogWrite() functions, you'll use it to control the voltage at pin 9
- analogRead() will be used to monitor the potentiometer
- Since the pushbutton is only registered on release you'll need some sort of state variable to save the buttons previous state or use interrupts(easier but more advanced)
- For the last part you'll need to check out stuff on Serial comms and interrupts. Additionally, you'll need to make use of a map function in order to report the value appropriately

WORK THIS OUT IN PIECES!!!!!!!!!!!!!!!!!!!!!!!!