Name:
Date:

Circuit #1 Blinking LED

1.

How is this circuit, or a circuit like it, used in everyday life? Provide at least three examples.

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Did you get your LED (Light Emitting Diode) turned on?
Great. Fill in the answers below using red LEDs.

2.

Two LEDs in series, 5V:

V = _____ I = _____ R = _____

3.

Two LEDs, parallel, 5V:

V = _____ I = _____ R = _____

4.

One LED, 3.3V power:

V = _____ I = _____ R = _____

5.

Two LEDs, series 3.3V:

V = _____ I = _____ R = _____

6.

Two LEDs, parallel 3.3V:

V = _____ I = _____ R = _____

Replace your 330Ω resistor with a 10KΩ resistor.

7.

Two LEDs in series, 5V:

V = _____ I = _____ R = _____

8.

Two LEDs, series, 3.3V:

V = _____ I = _____ R = _____

9.

What do you think would happen if you connected a 9V battery as your power source for the first circuit?

_____

_____

_____

10.

Assuming the same resistance as the original circuit, what would the current equal with a 9V power source? Show your work.

_____

_____

_____

11.

In the code below circle the "*setup( )*" method and explain below what it does in this instance.

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_____

_____

12.

Underline the code that turns the LED on.

```
int ledPin =  9;

  void setup()
  {
  pinMode(ledPin, OUTPUT);
  }

  void loop()
  {
    analogWrite(ledPin, 200);
    delay(1000);
    analogWrite(ledPin, 0);
    delay(1000);
  }
```

13.

Why does the code above use pin # 9 instead of pin # 0 or pin # 1? Explain why pin # 0 and pin # 1 are not options. Make sure you explain for both digital pins and analog input pins.

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14.

Explain why you might use LEDs on an illuminated shirt (or hat, etc) instead of other types of light bulbs.

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