Lesson 3 – The SWITCH, and drawing circuits!

Test your knowledge!

- What does a resistor do?
- Why do we have to use a resistor with an LED?

New Things!

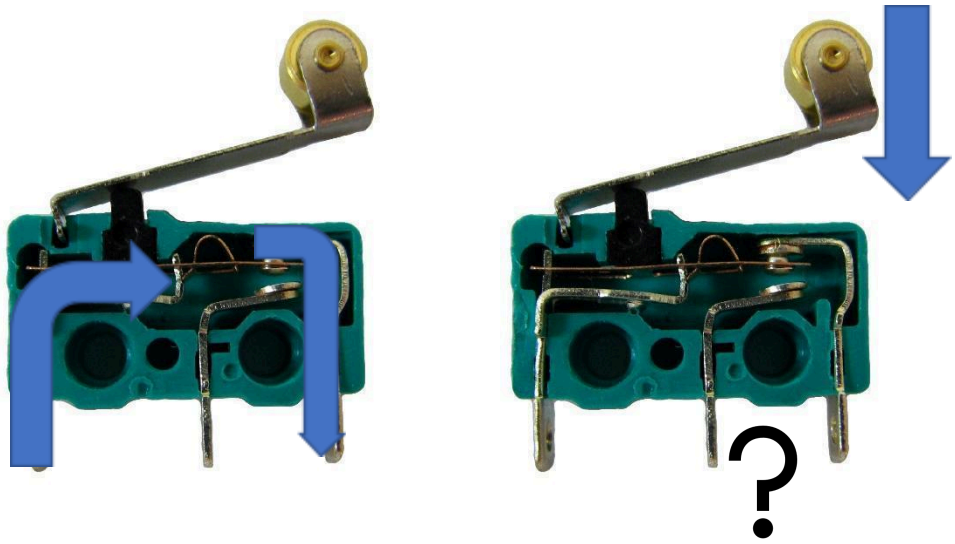
- New circuit elements
    - Introduce the switch
- Drawing circuits, and their cool symbols
- Activity: Add a switch to your light circuit!
- Activity: Draw a diagram of your circuit!

The SWITCH

So we have our cool LED flashlight on a breadboard, but how do you turn it on and off?

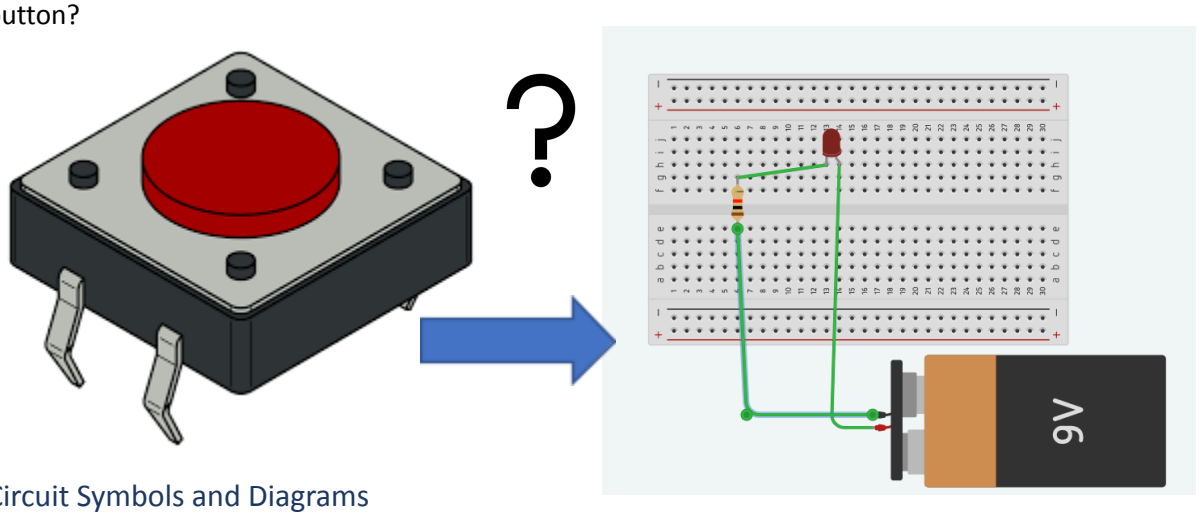
What if we could add a button to turn it on and off, just like we do the lights at home? Introducing….. our latest circuit element, THE SWITCH!

There are all kinds of cool switches. Some of them move back and forth, some of them only work when you press them down. Either way, what they do is **CHANGE THE FLOW** of electricity. A simple switch just disconnects the electricity… more complicated switches can make the electricity go all sorts of different ways then you press the switch! Which way will the electricity go if you press the switch below?



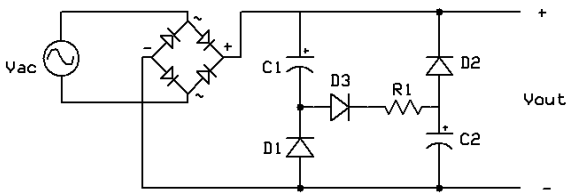
Activity 2: Use a switch

Can you add a switch to your LED breadboard circuit to turn the lights on and off at the press of a button?



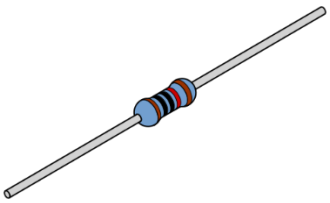
Circuit Symbols and Diagrams

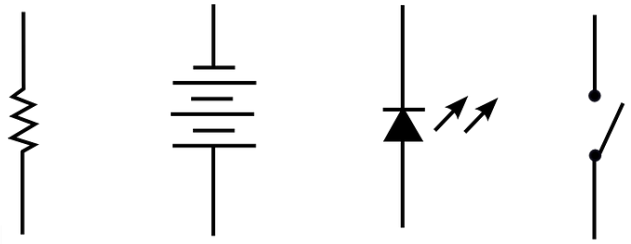
So far, we have used a bunch of different circuit elements. And to figure out how to hook them up, we've been using pictures and even words to describe how they go together. What do I do when I want to remember how I made a circuit?



Well, guess what, us engineers came up with our own way to DRAW circuits that we can all understand. These special drawings are called **SCHEMATICS**.. which is a fancy word for a "simple" drawing.

To make these drawings, we replace every circuit ELEMENT with a symbol. Time to learn how to draw some cool Symbols! Aren't they cool! Work with your instructor to match each element with its symbol:





Activity 3: Draw a SCHEMATIC of your circuit

Can you use the symbols to draw your circuit diagram on this page?

