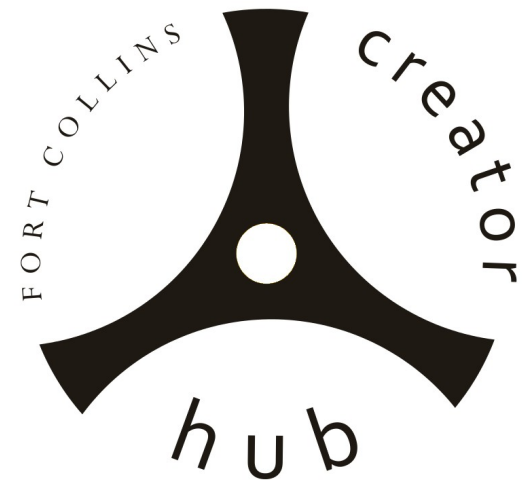
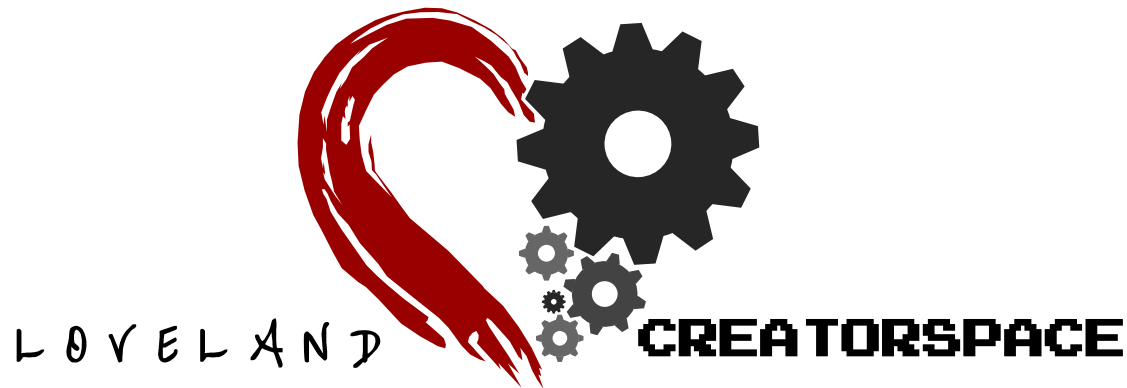


Let's build circuits!



Welcome

- Today we will build some electronic circuits
- Four different circuits
 - Choose which you want based on experience
 - Light an LED
 - Control an LED using a switch
 - Build a NOT logic gate (inverter)
 - Flash an LED

Breadboards

- Used for quick circuit prototyping
- Has holes to plug components' wires into
- Internal wires connect the holes in a predefined pattern

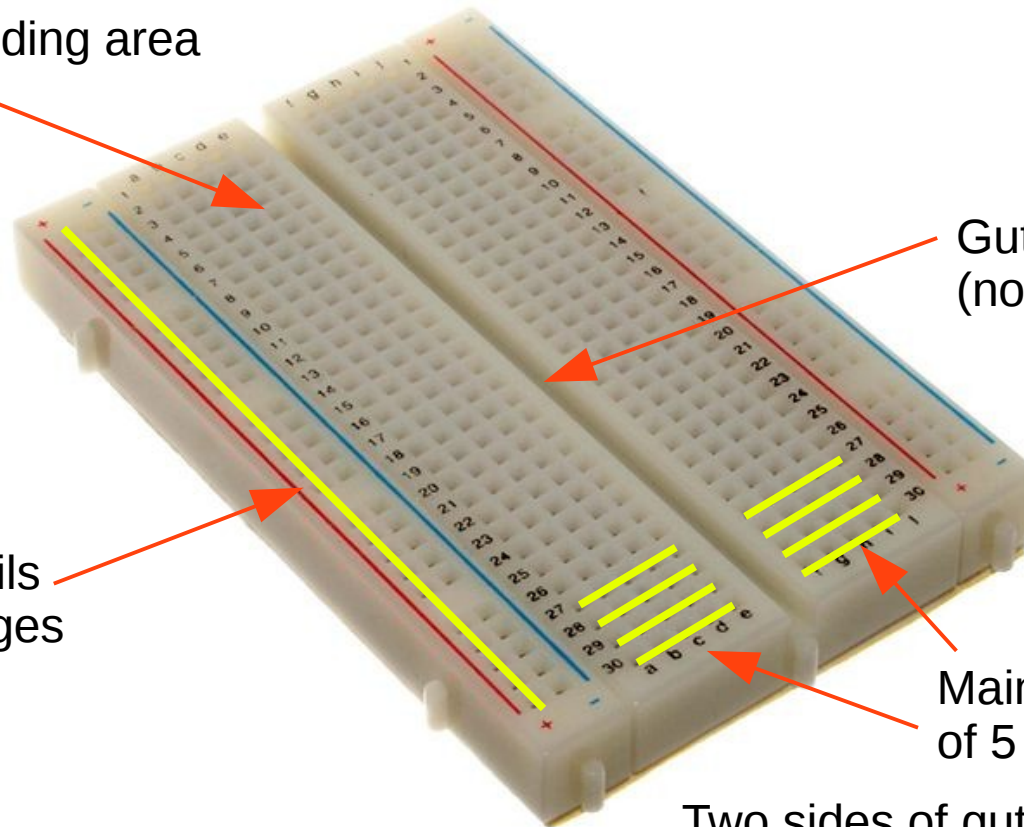
Main circuit building area

Gutter for ICs
(not used today)

Power rails
along edges

Main body is columns
of 5 connected holes

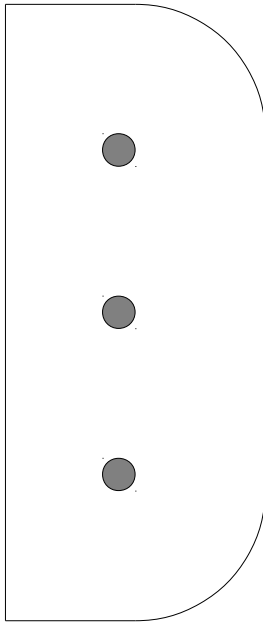
Two sides of gutter not connected



Placing components

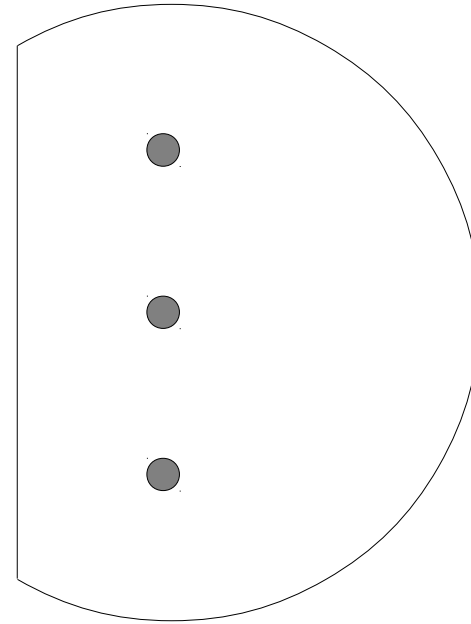
- Polarity
 - Some components don't work backwards; follow instructions in handouts
- Don't bend pins
 - Gentle aiming OK, no need for permanent kinks
- Carefully connect circuits as shown
 - Or you may burn out a component
- Don't connect power until circuit is complete

Transistor Packages



E-line package

Kit contains:
ZVP2110A (used in NOT gate)



TO-92 package

Kit contains:
BS170 (used in NOT gate)
BC547 (use in LED flasher; has pink dot)

Start Building

- You will need:
- Circuit handout(s)
- Breadboard
- Bag of components
- Power supply (USB)
- Power cable (modified USB)