

## Electronic Project Construction Tips/Pre-planning

1. Study the parts.
  - A. Learn what the different types of parts look like
  - B. Make and label diagrams of the parts. You can do this in your journal.
  - C. Study the breadboard.
  - D. Make a mental note or draw a diagram that shows the connections.
  
2. Resistors
  - A. Make a color code chart.
  - B. List the colors in the correct order for the resistors in your project.
  
3. Capacitors – Mylar and electrolytic
  - A. Mylar capacitors – If needed create a chart to decode the value
  - B. Non-polarized – doesn't matter which direction inserted into the circuit
  - C. Electrolytic capacitors
  - D. Polarized – It does matter which direction it is inserted into the circuit
  - E. Band with negative sign (-) will indicate negative lead; shorter wire
  - F. Positive lead is not labeled; longer wire.
  
4. Make transistor diagrams for quick reference.
  - A. Draw the bottom view of the transistors.
  - B. Draw the schematic of the transistors.
  - C. On both drawings label the base, collector, and emitter.
  
5. Make diode/LED diagrams for quick reference
  - A. Draw the diode and LED case.
  - B. Draw the schematic of the diodes.
  - C. Label the cathode side of both diodes.
  
6. The transistors have two case styles:
  - a. TO18 case, round with a tab
  - b. TO92 case, semicircular, one side is flat
  
7. NE555 time IC
  1. Draw the top view of the chip.
  2. Label the pin numbers. Look at it from the top; the dot is the location for pin 1

When assembling your project **OBSERVE THE POLARITY** of the parts. Incorrect polarity **will** cause damage.

***Check your wiring. Check your wiring again. Have your partner check the wiring.***

**Note: Improperly assembled circuits will damage the transistors and LEDs.**

**Learn the location of the most convenient Radio Shack to purchase components you burn up.**