SOLDERING BASICS

ENGINEERING ELECTRONICS SHOP

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DEFINITIONS

- **Solder:**
  A low-melting alloy, usually Lead & Tin (also brass and silver), used for joining less fusible metals

- **Where it is used:**
  - Electronics
  - Plumbing
  - Art (stained glass, metal works)
WHAT YOU WILL NEED

• Soldering Iron/Station and Tips
• Solder
• Solder wick/Solder Sucker
• Helping hands
• Flush Cutters/Pliers
• Flux (pen or brush)
PREPARATION

• Tinning/Cleaning the Tip:
HOW TO SOLDER

• Through-Hole (THT)
• Surface-Mount (SMT)
THROUGH-HOLE SOLDERING

• Power on Soldering Iron
• Apply flux if necessary/wanted
• Apply solder to tip to form a bead
• Use iron to heat pin and pad
• Apply solder to pad
SURFACE MOUNT SOLDERING

- Power on Soldering Iron
- Apply flux to pad/s
- Heat Pad and apply Solder
- Place Component and Reflow Solder
DRAG SOLDERING (SMD CONTINUED)

- Use flat tip for iron
- Apply flux to pad/pins
- Apply a bead of solder to the iron
- Very lightly drag the solder bead across the pins
- This takes PRACTICE!!!
PROBLEMS

• Cold Solder Joint

• Solder Bridge (SMD)
• Good Solder Joint
DESOLEDERING
OTHER PROBLEMS

- Tin Whiskers

Normally, whiskers are so thin that they are difficult to see without a microscope.