

Soldering 101

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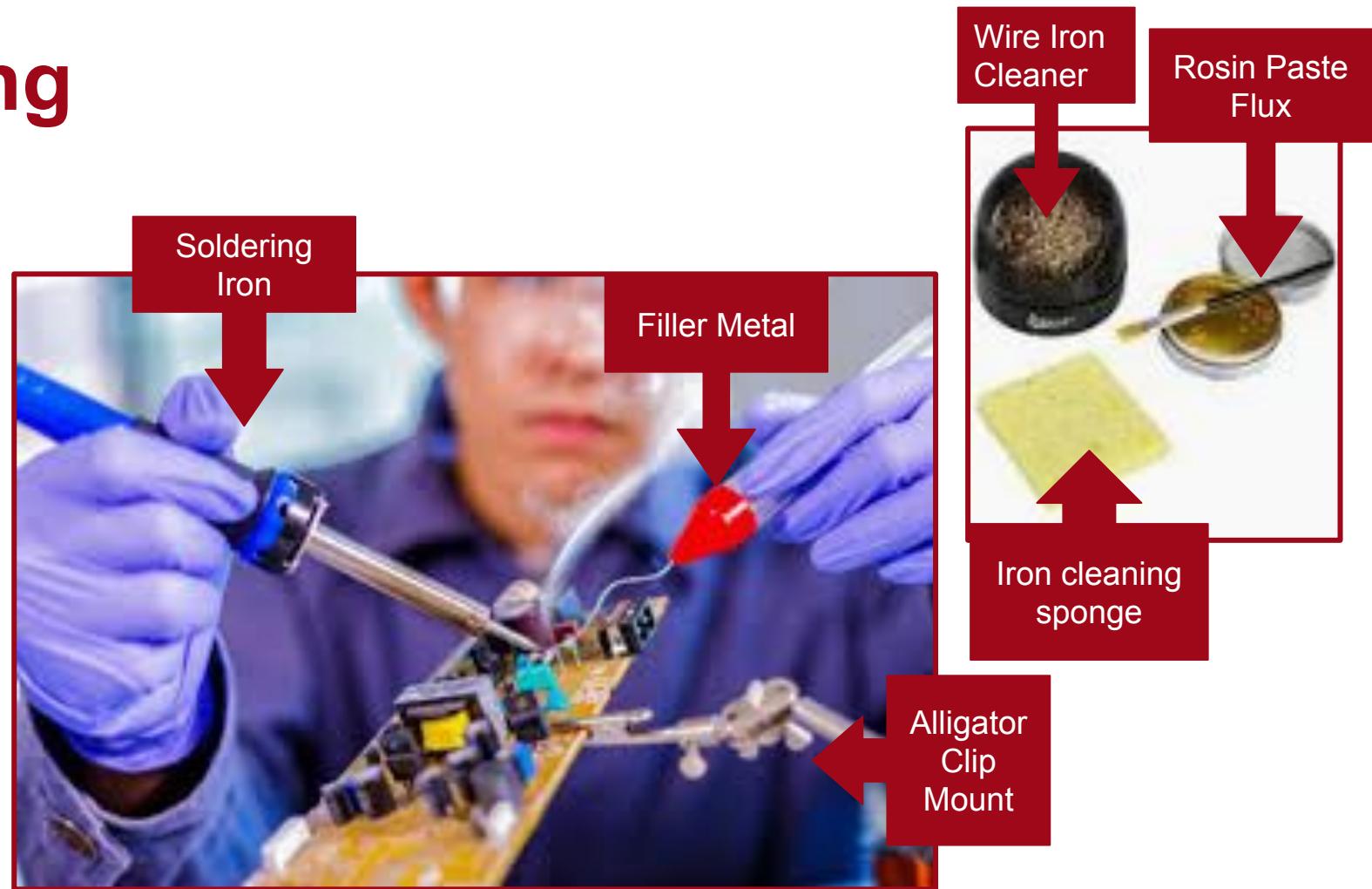
What is Soldering

Process of join two metal parts using a filler metal

- We have lead-based solder

PPE

- High heat! ~300-350°C
(Be careful)
- Lead- Wash your hands!
- Eye Protection
- Good Ventilation



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Soldering steps

Step 1: Gather and organize materials and tooling

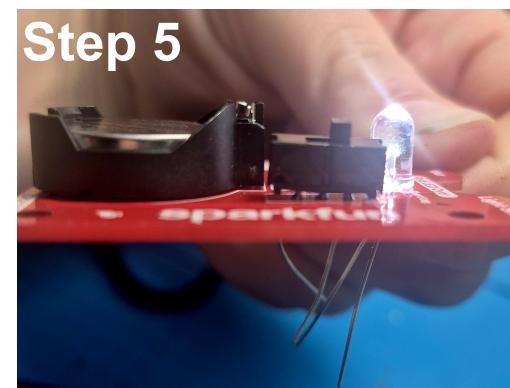
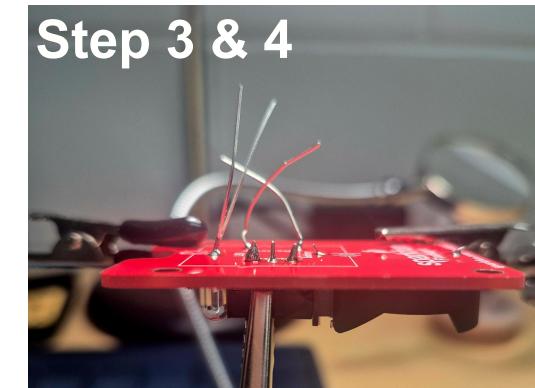
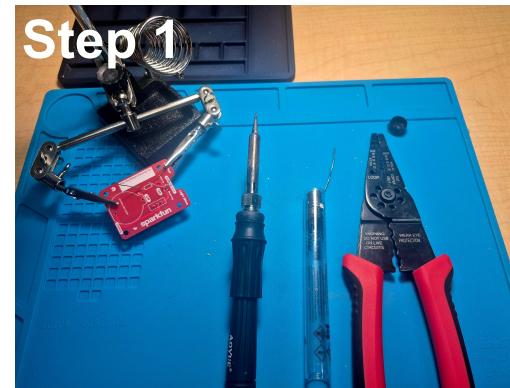
Step 2: Turn on Soldering Iron ~350°C

Step 3: Mount metal parts with standoffs or clip

Step 4: Apply filler metal to the metal parts you are joining

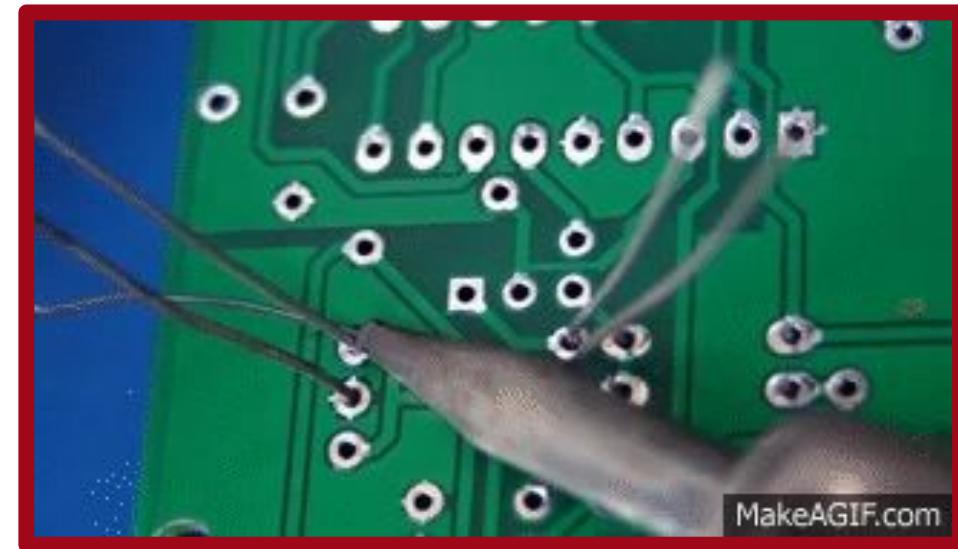
Step 5: Check the connections

- **After checking the connections, you can clip off the extra length of the wire.**



How to applying the filler metal in step 4:

- 4.1) Heat the component and pad **first**.
- 4.2) Then apply the filler metal to the component with your off hand.



MakeAGIF.com

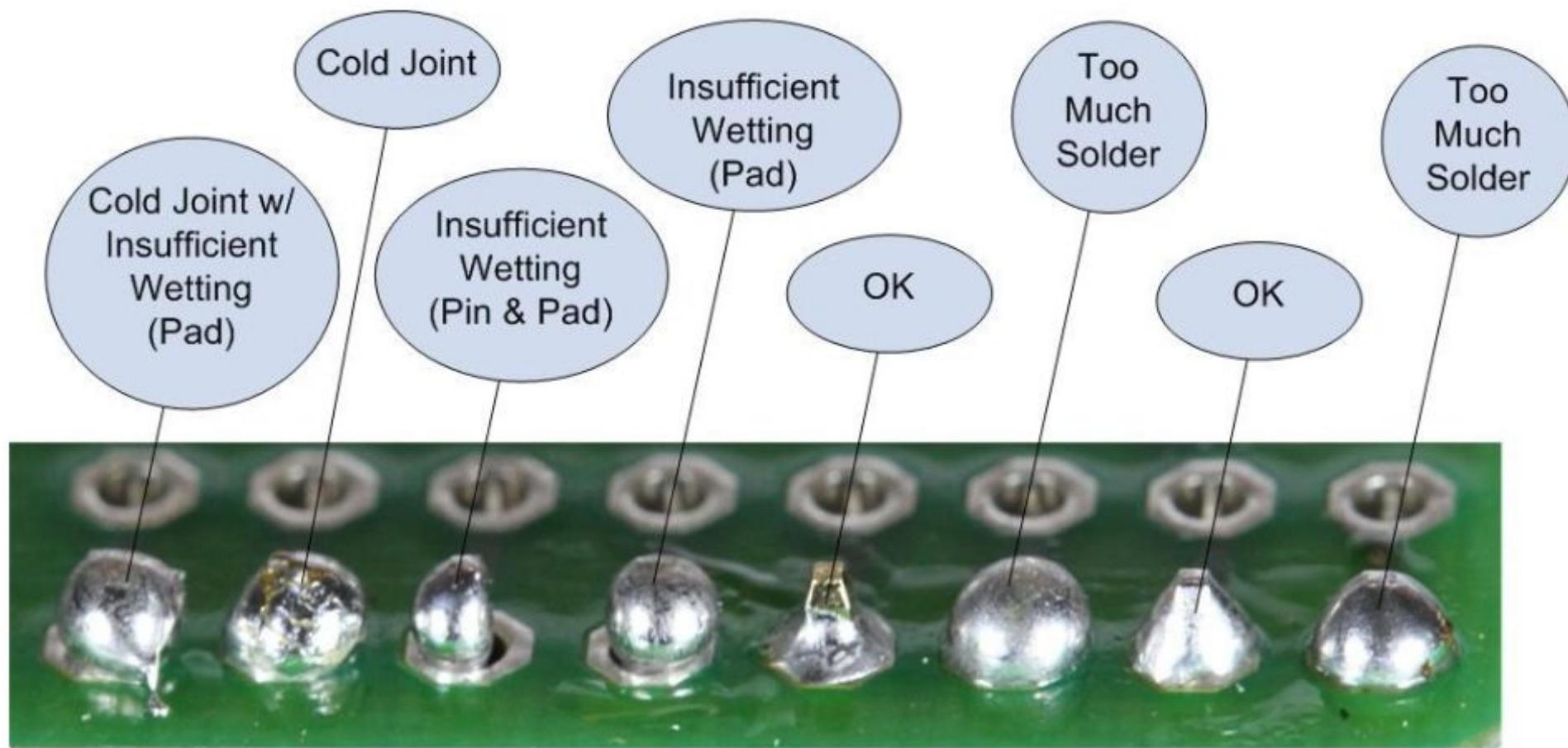
[EEVblog 183 Soldering Tutorial Part 2](#)

Everyone will have a try in the hands-on session.



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Common soldering problems



<https://learn.adafruit.com/adafruit-guide-excellent-soldering/common-problems>



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Desoldering: Process of removing solder from components



Still need PPE and Good Lab Practices!



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How to desolder

Heat up filler metal for removal

Apply paste promoting reflow (optional)

Remove the the filler metal



You can use a combination of these tools for different tasks

- **For removing large amounts of solder:** Soldering iron → Solder paste → Solder wick
- **Removing the component:** Heat gun → Pliers
- **Cleaning the pad area:** Soldering Iron → Soldering Vacuum



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