

Soldering 101

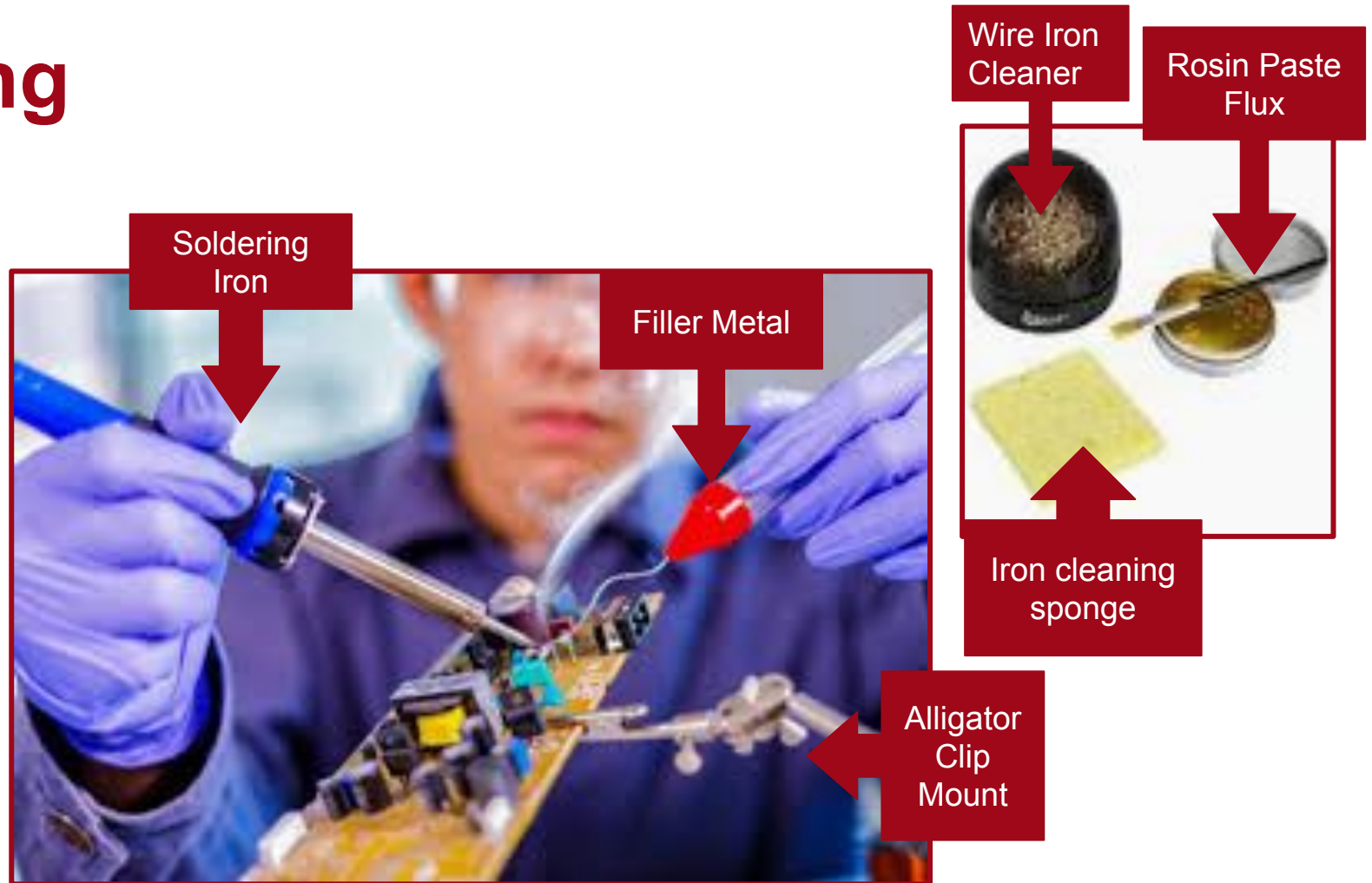
January 15th, 2026

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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

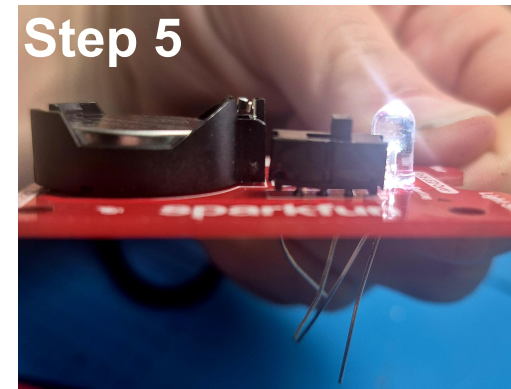
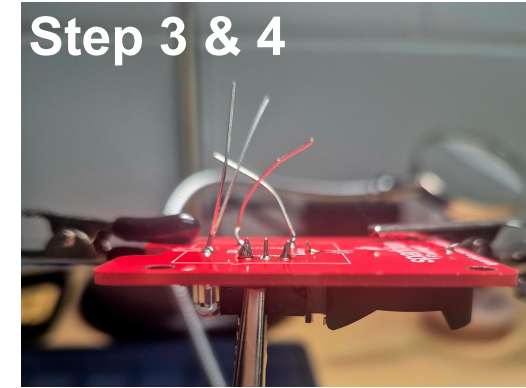
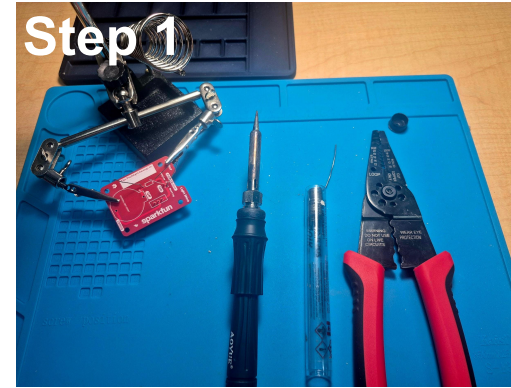
Step 2: Turn on Soldering Iron ~350°C

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**.

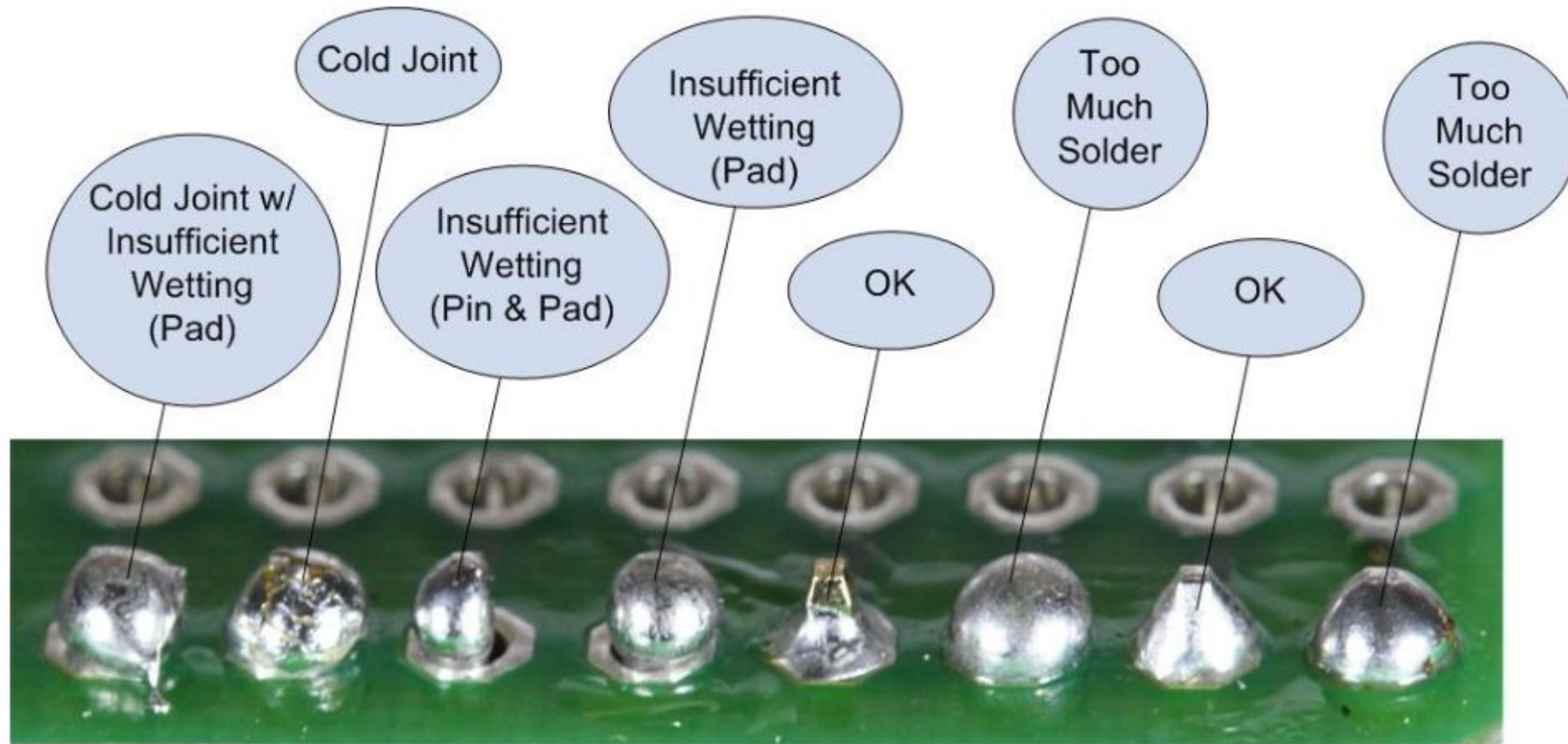
4.2) Then apply the filler metal to the component with your off hand.



[EEVblog 183 Soldering Tutorial Part 2](#)

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

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!

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