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Makerspace Project: Add a Heating Pad to Clothing

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What you need to know:

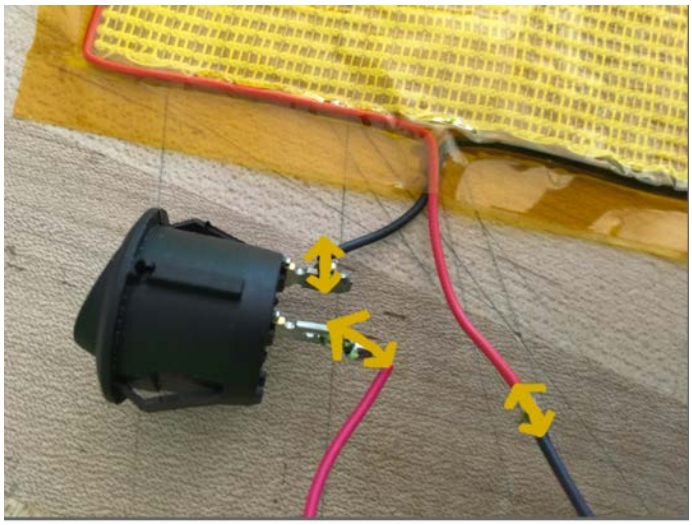
- Basic soldering skills
- Sewing with a needle and thread

What you need:

- Soldering kit
- A heating pad
  - https://www.sparkfun.com/products/11288
- A battery holder
  - https://www.sparkfun.com/products/552
- A switch with a positive and negative lead.
  - https://www.sparkfun.com/products/11138
- Four AA batteries

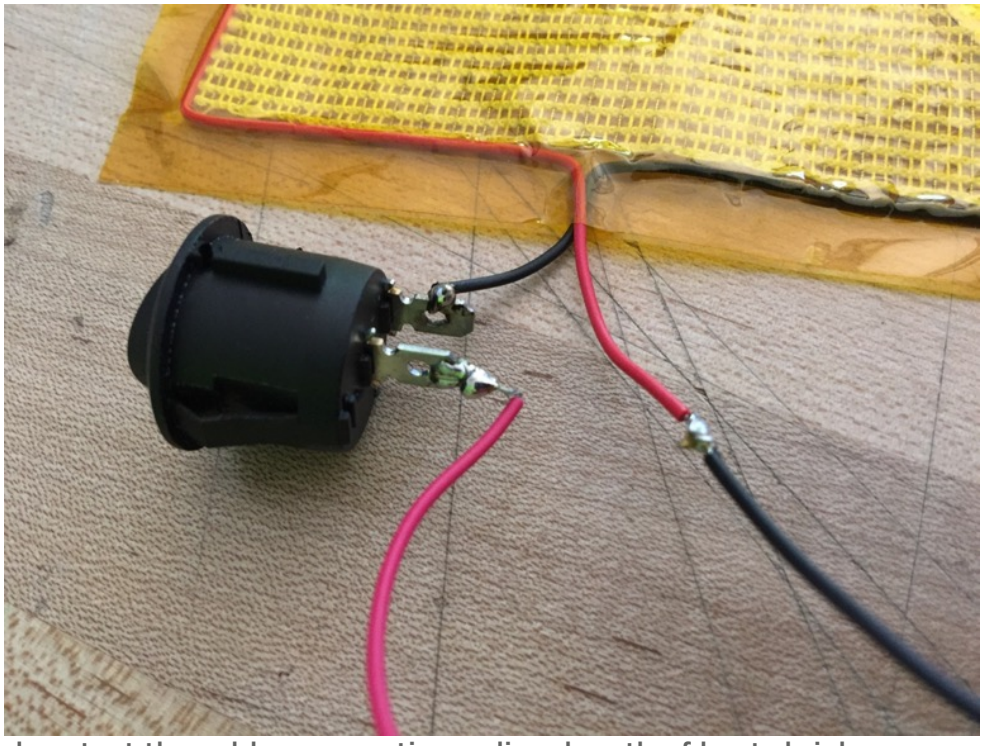
1. Set up your soldering iron kit.

2. Take a look at your heating pad, battery holder, and switch. Each has a positive and negative lead or end. The switch will control the electricity going to your heating pad so it needs to be in the middle of a connection between the heating pad and the battery pack. Your setup will look something like this:
   (battery pack positive)(switch lead)---(switch lead)(heating pad negative)---(heating pad positive)(battery pack negative)



The switch is not polar, meaning it is not positive and negative, so you can choose whichever lead to solder to the battery pack and heating pad.

3. Solder the positive lead of the heating pad to the negative lead of the battery pack.
   Solder the positive lead of the battery pack to one lead of the switch.
   Solder one lead of the switch to the negative lead of the heating pad.



TIP: To insulate and protect the solder connections, slip a length of heat shrink over one of the wire leads. The heat shrink should be long enough to cover the soldered connection. After you've soldered the connection, use a heat gun to shrink the heat shrink over the connection.

4. Insert your four AA batteries into the battery pack.

5. Switch the circuit on. The heating pad should gradually warm up. Turn it off when you're done checking it works

Now you can sew down the heating pad into your clothing. These would be great in the sleeves of a mid-weight winter jacket. Make sure you secure the battery pack and cover the wiring so it doesn't get shorted.