



## INTRODUCTION

A common problem occurring in the ZL is that the phone will sometimes attempt to draw significant current from the battery, immediately shutting down the phone. Replacing a worn battery with a new one should help to reduce this problem, even if only temporarily (and by temporarily this could mean any number of months)

**BEFORE READING THIS GUIDE**, please be aware that by removing the backing of this phone, you are essentially REMOVING THE MOISTURE SEALS protecting your phone. No more dumping this one in water unless you want to get out the silicone gun and have some fun with it

### TOOLS:

- [Phillips #0 Screwdriver](#) (1)
- [Spudger](#) (1)
- [Heat Gun](#) (1)
- [iFixit Opening Picks set of 6](#) (1)
- [iFixit Opening Tools](#) (1)

### PARTS:

- [Sony LIS1501ERPC Li-Polymer Battery](#) (1)

## Step 1 — Battery



- We will be removing components from the back of the phone; the battery is sandwiched between the motherboard and the screen so it's right in the middle of everything
- The service cover is easily visible from the back of the phone. There is an indentation to put a finger nail/spudger to pry **upward**
- There are 2 screws located underneath the label that shows where your sim card/microSD card go. Pry the label upwards to gain access.

## Step 2



- Remove the 2 #0 Philips screws securing the back of the case to the frame. The #0 screwdriver is the only one that will be needed for completion of this repair.

**⚠ BEFORE GOING FURTHER** - Keep in mind that the ability to drop this phone in water (without ruining its internals) **WILL BE LOST**, as the gasket will definitely become warped or broken during its removal

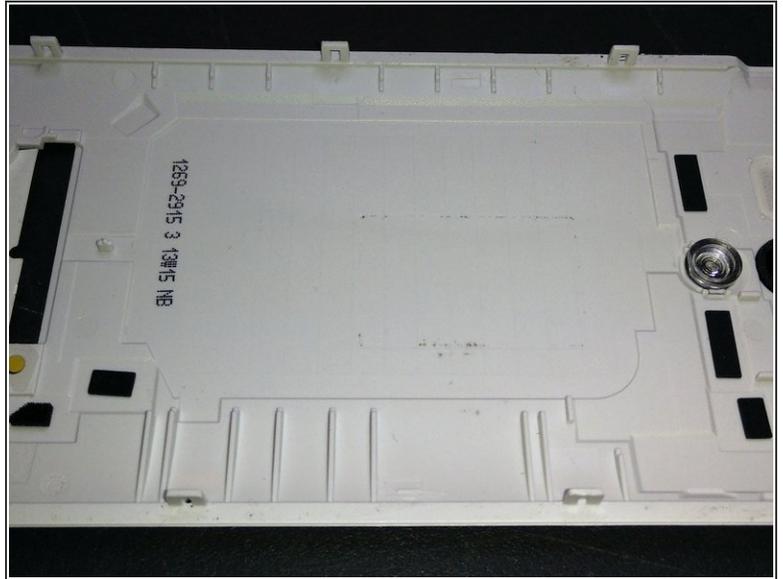
- Start with your thinnest opening tool (mine happens to be a sharpened guitar pick) and insert it between the back casing and the frame. You should hear the sound of adhesive letting go.

## Step 3



- Use a heavier plastic opening tool or spudger inside the gap that you began to open up, sliding it further down each side of the case.
- ⓘ You may find it easier to go in short steps, prying the rear case away from the frame slightly before advancing
- There are 3 plastic clips on one side and 2 on the other; in these areas you will have more resistance when sliding/prying. Slowly apply more pressure and they should release with a click

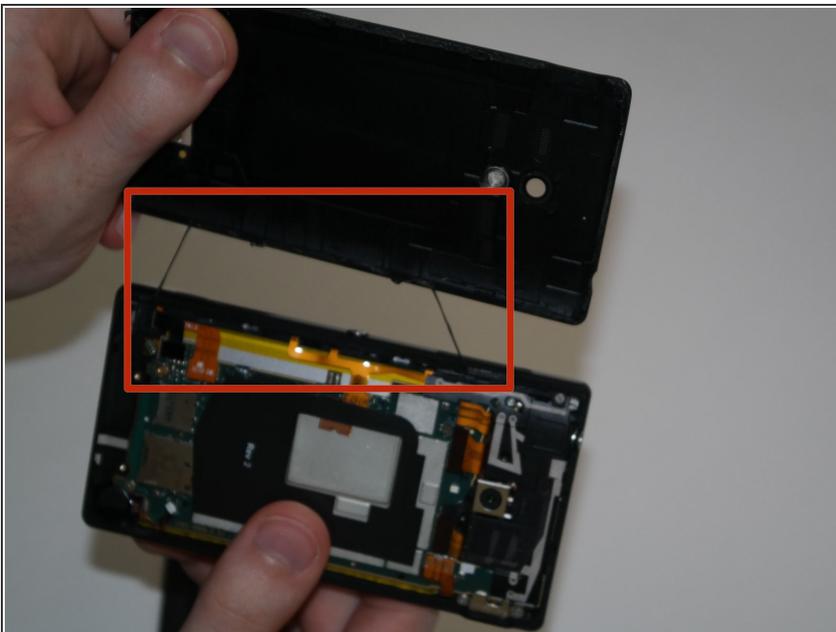
## Step 4



 Take care not damaging the thin coating off the rear case as shown in the picture of the white version of the ZL.

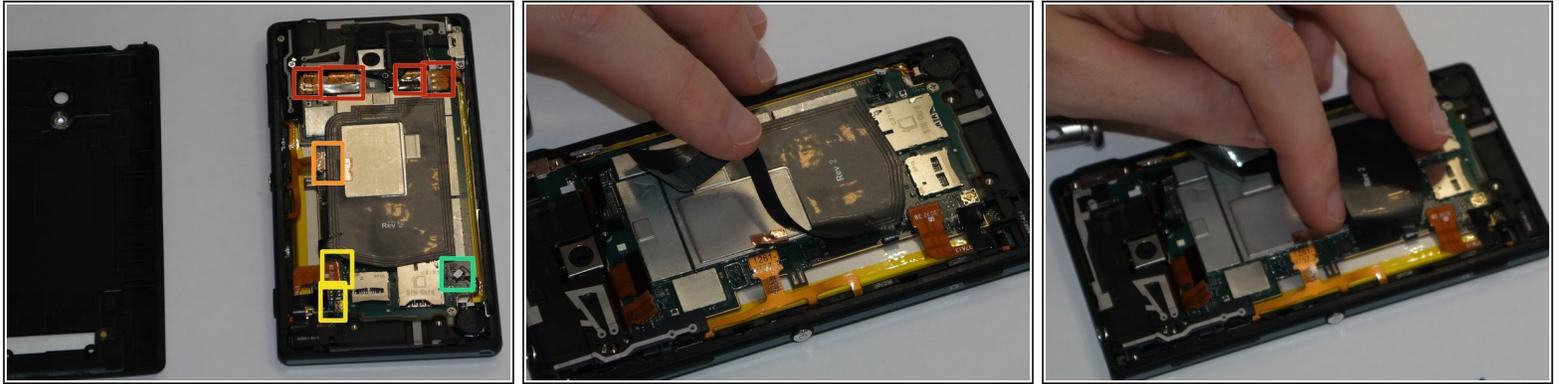
 The notches of the rear case are shown in this picture

## Step 5



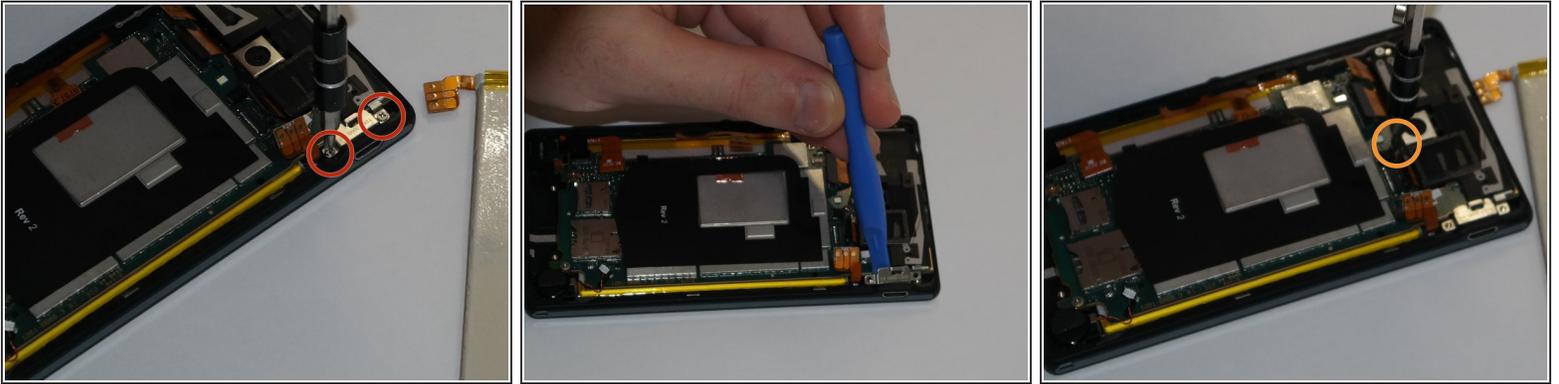
- *Goodbye, rubber gasket* - Because it won't be a uniform shape anymore, it is recommended to remove all remaining pieces of the foam/rubber seal
-  Take your time, and make sure it is done properly. If you don't get it all, you may find that the phone back **does not sit evenly against the frame**

## Step 6



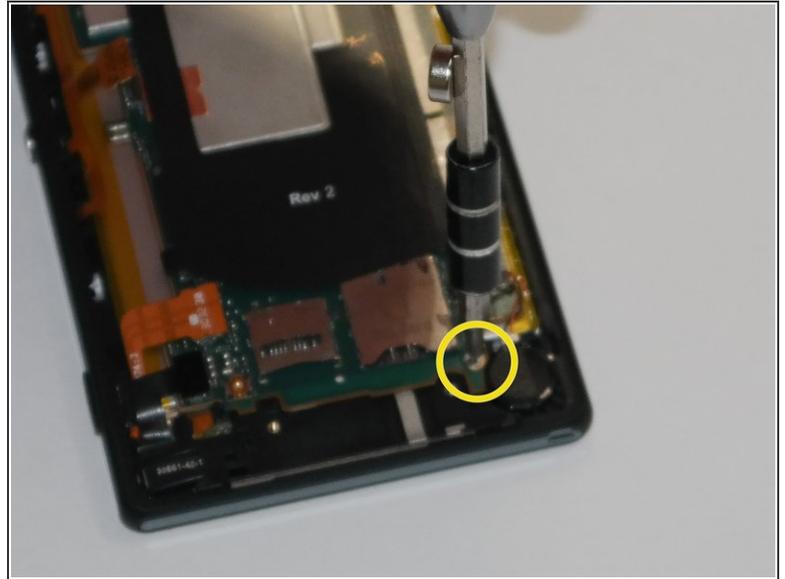
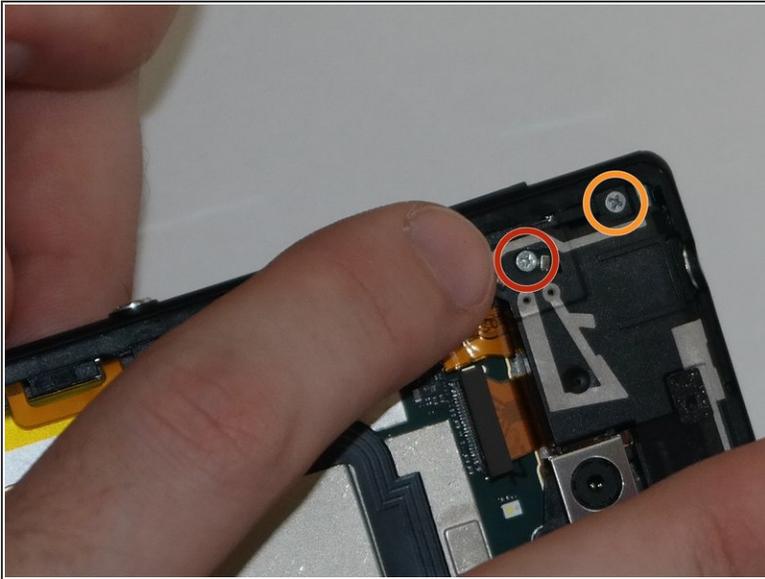
- All of the ribbon cables listed will need to be removed - thankfully, they are all **snap connectors**, meaning they simply lift off of the motherboard to disconnect
  - Removal of the top 4 snap connectors is straightforward - on the **right side** of each connector, insert a prying tool and pry upwards. The battery cable (right corner) requires slightly more force
  - Look at picture 2 and 3 - bend the NFC antenna (thin black piece) upwards to reveal copper tape bridging the connector and the motherboard metal. Peel this up from the connector
  - Straightforward removal, see top 4 (red) connectors
  - Pry from underneath where the wires are. Shouldn't take too much force, but it is small and likely brittle so be careful

## Step 7



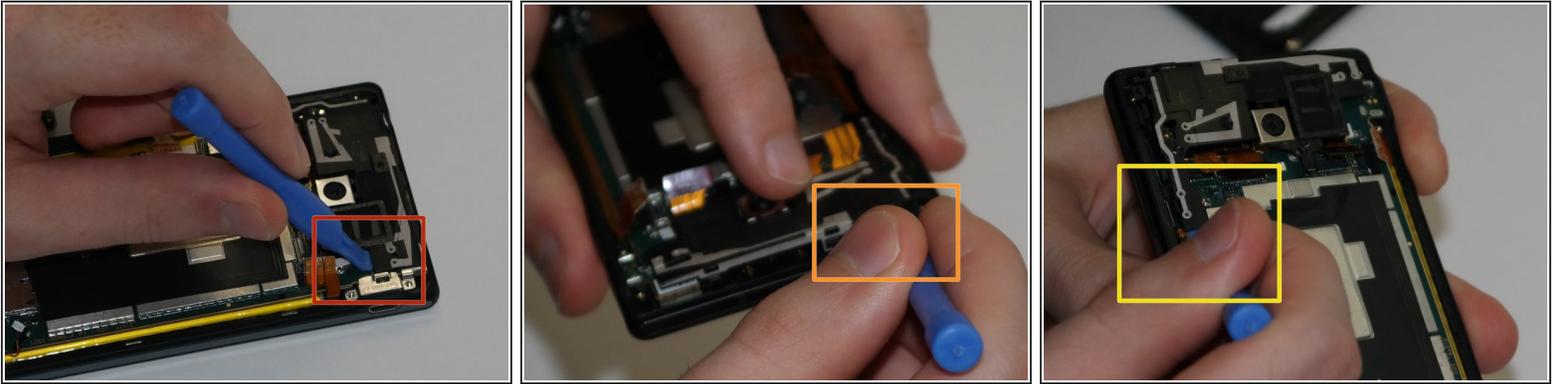
- Remove the 2 screws that secure the charging port bracket (silver clip shown)
- Remove metal bracket by lifting from circuitry-side (as shown). There is mild adhesive securing it to the charging port; don't be surprised if additional force is needed
- Remove the black screw located just underneath the rear-facing camera

## Step 8



- The two screws on the left side of the motherboard are **not the same size**, so for organizational purposes:
  - Remove this one first
  - And then this one
- The last screw is located on the bottom of the motherboard

## Step 9



**⚠** This step involves removal of the top camera and speaker module. **Read the next two steps before starting**, as it is easy to rip one ribbon cable if you pry the part too far

- Insert your spudger as shown. This will involve some pressure, but the right side of the module should begin to lift from the frame
- My hand was covering the exact entry point, but you will want to further separate the module from the top left side of the phone (I'm holding it upside down)
- **Be very careful** when lifting from the third spot - you only want to separate the clips on the side, **if you lift the entire piece out of the phone, you can easily rip a ribbon cable underneath the assembly. See the next step for directions on how to fully remove the module**

## Step 10



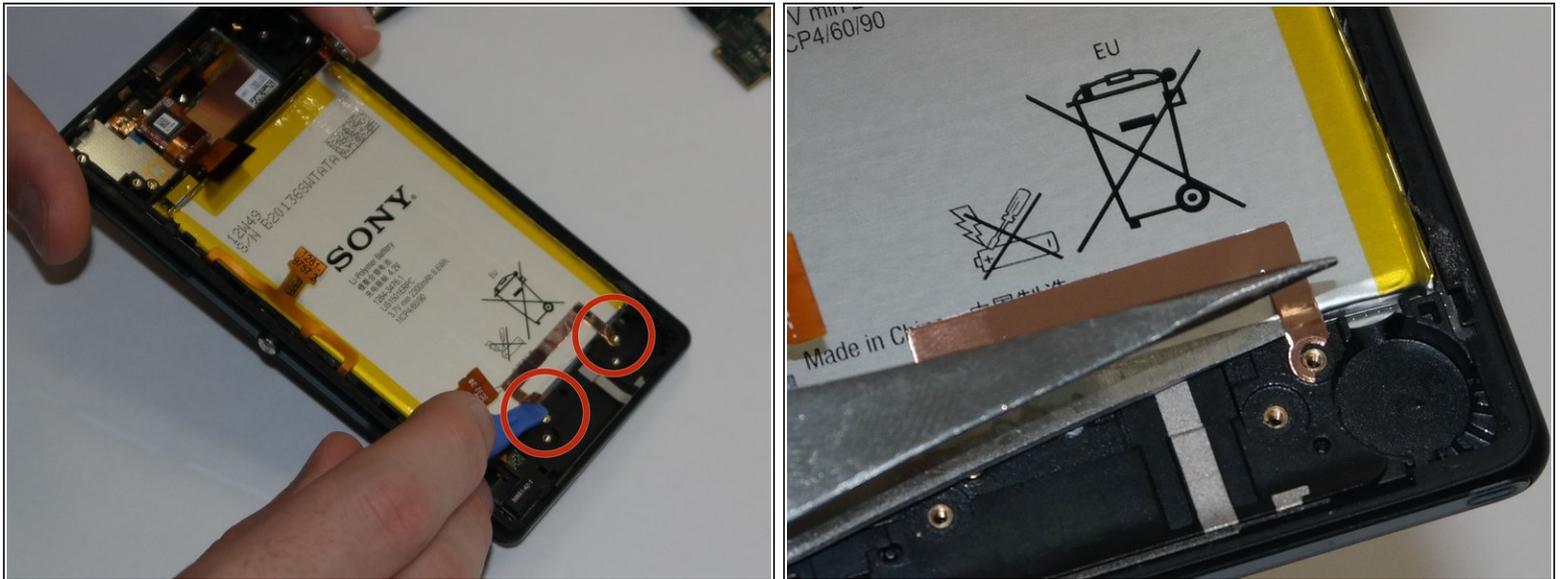
- The top-left flex cable is the culprit for the added difficulty of fully separating the two pieces. But, since the adhesive is relatively small (see 2nd photo), by lifting the connector at a **90 degree angle away from the phone at a slow, steady pace**, it should disconnect without damaging either cable
- Notice how much adhesive is holding the ribbon cable against the phone, but **do not judge its effect by its size**, or you may lose some critical phone functions!
- This is the flex cable that is likely to tear if you are not careful when removing the connectors from the adhesive. I believe it is the **proximity sensor cable**, which turns the screen off when you have your face close to the phone (during a phone call)

## Step 11



- We are now free to remove the motherboard. Start by prying from the left side of the phone, **making sure that none of the ribbon cables are catching on the motherboard as it is lifted**
  - ⚠ The goal is to lift the motherboard to roughly a **45-degree angle** on this side, as the charging port needs to be inserted and removed on an angle (see photo 2)
  - ⓘ Although I chose to start lifting from closer to the top of the motherboard, there are no physical components on the back, so damage is unlikely as long as you're careful (see photo 3)

## Step 12



- **The battery is in sight!** - keep in mind that **without a heat gun (or very least hair dryer), this step will be impossible**, as the adhesive that secures the battery to the back of the phone is very strong
- Before removing the battery, make sure that the two ends connecting the battery to the frame have been disconnected from the frame
- ⓘ I found it easiest to remove by getting in between the gap with some **tweezers** and pulling the tape up so that it disconnects.
- You can keep the majority of the tape on the battery untouched, but eventually you will have to take it completely off the old battery and transfer onto the new one.

## Step 13



**⚠** The objective is to remove the battery with the least amount of stress possible. Although it may not be likely on its own, **bending lithium-polymer batteries will break their internal seals, and CAN EVEN CAUSE THEM TO EXPLODE!**

**★** I will not be held liable for anyone's attempt on completing this step, or any others for that matter. It is **AT YOUR OWN RISK**

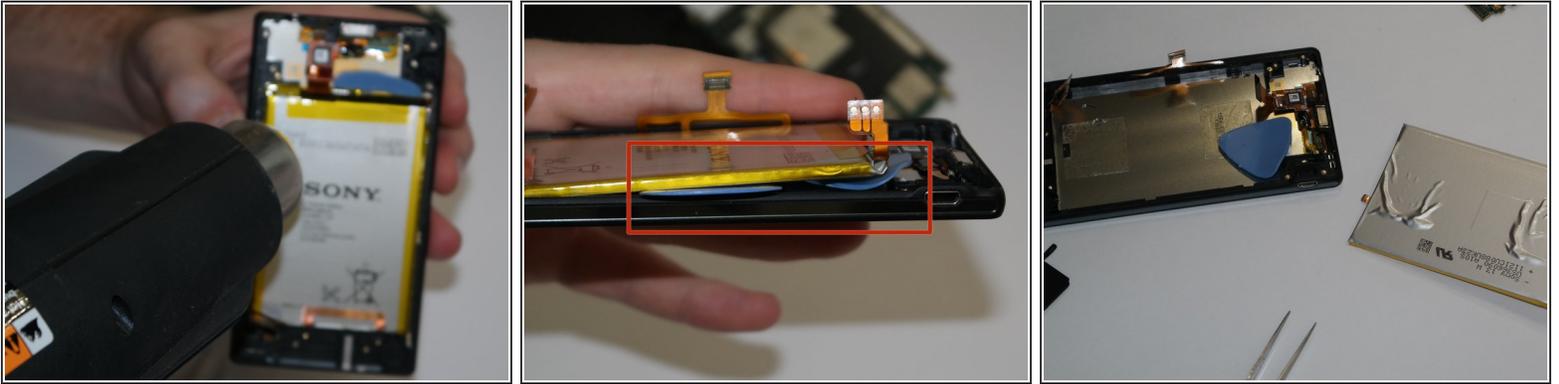
- With that in mind, on **medium heat** and constantly moving around the entire pad of the battery, heat the area for roughly a minute, or until it is hot to the touch

## Step 14



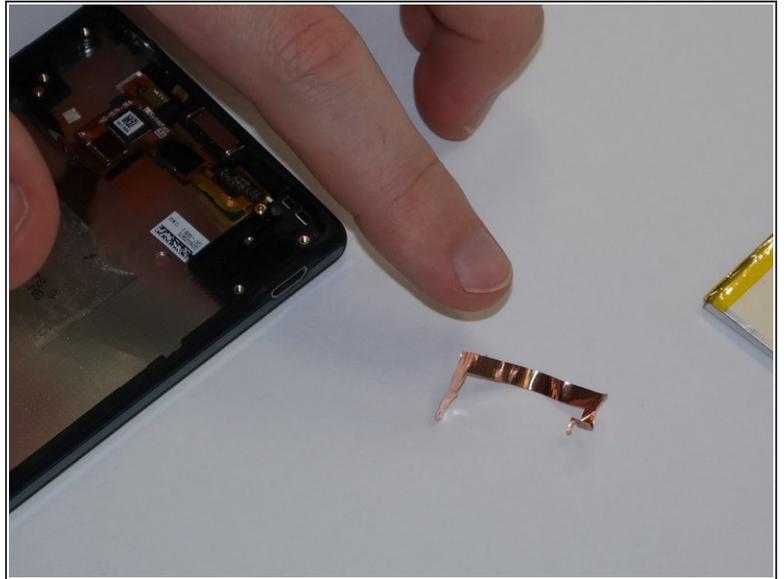
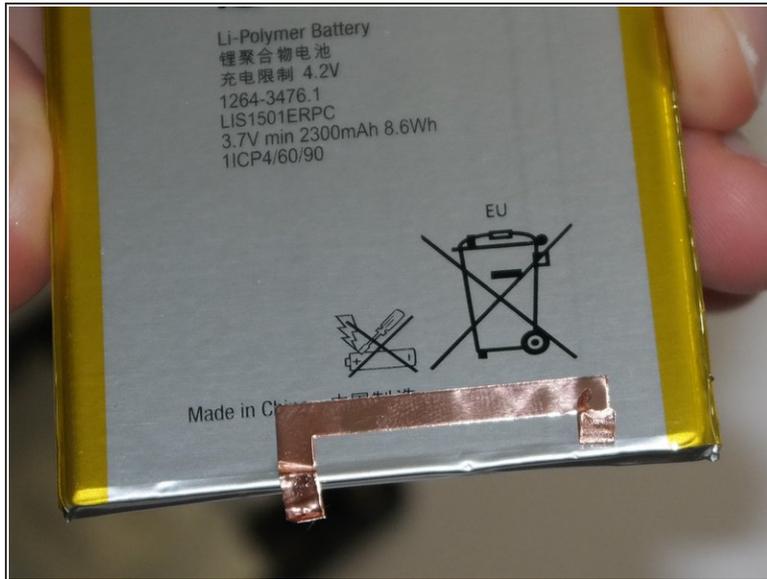
- While the phone is still warm/hot (and **don't burn your hands**), insert a guitar pick/opening tool underneath the battery around the top. **some force will be needed**
- ⓘ If all is going well, you will hear the sound of adhesive releasing and your opening device will slide further underneath
- If you've made it this far underneath the battery, the temperature has likely cooled down significantly. So, keeping the opening tool inside, you'll be heating the battery again. **This may deform your opening tool if it is made of plastic**, so use your least-favorite one

## Step 15



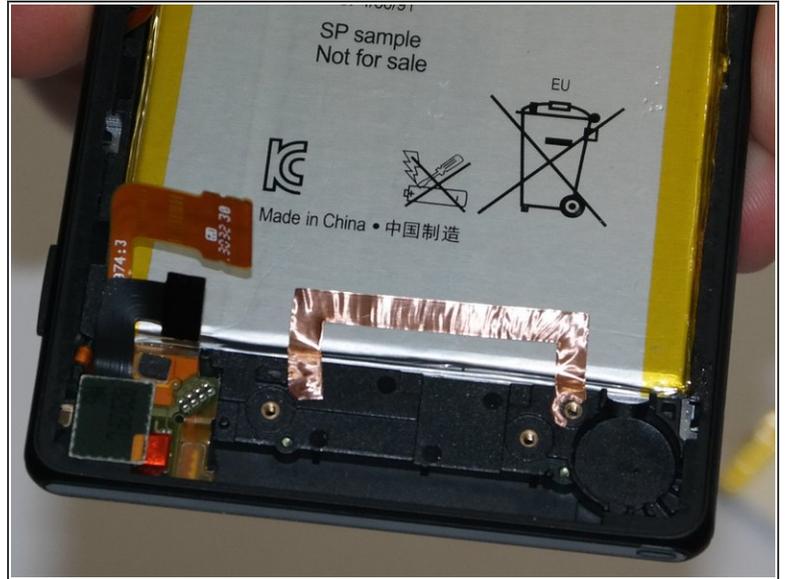
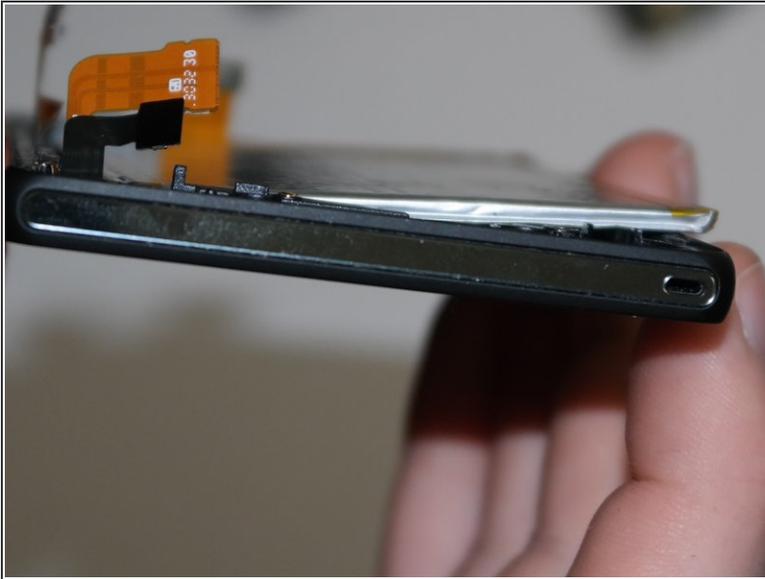
- Once again, heat the battery area uniformly until it is warm/hot to the touch
- Insert a second opening device around the area of the first, but **moving towards the corner** of the battery, in an attempt to begin separating from the side
- Push your opening tools as far as you can and pry upwards. Repeat the heating process if necessary, and with enough love and care, the battery should release. In the third picture, you can see the areas that adhere the battery to the case

## Step 16



- On the old battery, fully remove the copper tape that grounds the phone. It isn't terribly delicate, but it is definitely breakable. My recommendation is to use **tweezers**, but careful fingers should be fine
- Even if it's bent, as long as it's still intact, it should work with the new battery. Once the new battery is inserted, place the tape over the **contact and the screw inlet**, and simply flatten the remainder of the tape against the battery
- ⓘ The phone may work fine without this piece of copper tape, as it appears to be used for grounding. **I would not try this unless there are no other options**

## Step 17



- The new battery that I purchased fit very snugly inside the phone. **Make sure that the battery is not bent while inserting**, although you may have to apply some pressure to get it right inside.
  - May the force be with you
- With the new battery secured in place, you can now begin reassembly. With all of your previous experience, this shouldn't take more than 15 minutes at most.

To reassemble your device, follow these instructions in reverse order.