

A top-down view of a Fairphone disassembled into its various components, laid out on a light grey surface. The components include the screen assembly at the top right, a battery with text at the top center, a main logic board at the bottom left, and various smaller parts like the camera, earpiece, and connectors scattered around. A large blue banner with white text is overlaid on the right side, and a green banner with white text is below it.

Explore the story behind your phone

Fairphone urban mining manual

What is going to happen?

Page 1	- Urban mining story
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Urban mining story

Urban mining refers to the extraction of minerals and metals from existing products. Some countries have sufficient, high-quality recycling facilities to do this in an efficient and environmentally friendly manner, while others like China, Ghana and India have an informal do-it-yourself urban mining sector using methods that are often harmful to people and the environment.

Today, there are approximately 7.2 billion mobile devices in the world. This means that for the first time ever, the number of mobile phones in circulation outnumbers the global population.

A mobile phone contains over 30 different non-renewable minerals and metals.

Some of them, like gold and tantalum are rare earth materials and mined in conditions that are harmful for both the environment and the people who mine them. Exploitation particularly occurs in conflict areas, where mines and mineworkers are controlled by armed forces who use the high mineral revenues to finance their armies.

Once a mobile phone has reached its end-of-life, it often ends up being discarded as e-waste. However, if handled and dismantled in the right way, many of the materials inside can be recycled and re-used, lowering the social and environmental footprint left behind by the phone.

What material are we looking for?

There are over 30 minerals contained inside your phone. Today we're looking for four of them; Copper, Tin, Tantalum and Gold.



1 H																	2 He															
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne															
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar															
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr															
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe															
55 Cs	56 Ba		72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn															
87 Fr	88 Ra		104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 Fl	115 Uup	116 Lv	117 Uus	118 Uuo															
																		57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
																		89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

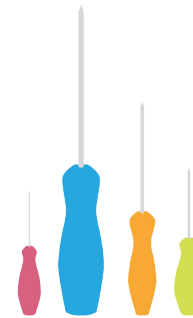
What tools will we need?

A selection of old,
broken phones
that have reached their end of life



Screwdrivers of
varying sizes

The small ones for the small screws, the
big ones to pull the plastic cases open



CAUTION:
Make sure you have located
an electronic disposal and/
or battery bin in your area to
dispose the material after
you have finished.

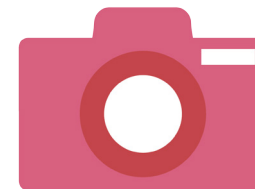
**DO NOT OPEN UP OR
DAMAGE THE BATTERY!**

The battery can contain toxic
substances like lead and acid.
Separate the battery carefully
and leave it aside while you
dismantle the rest of the
phone.

Cups or trays
to store the components that you
remove from your phone



A camera
You'll want pictures of this



Let's take our phones to pieces

Remove the rear housing or battery cap by hand or by using a screwdriver. If you find the battery, remove it carefully and place it in a separate cup or tray.



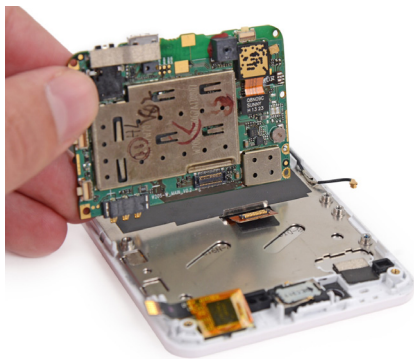
Look closely for screws that you can then unscrew. If there are no screws, use a screwdriver to make a lifting movement between the front and rear housing.



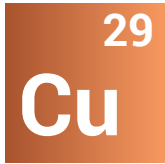
Remove the housing, the screen, the buttons and any other layers until you have found and isolated the Printed Circuit Board (PCB).



The PCB is the heart of the mobile phone, containing most of the device's minerals and metals.



These images were photographed by iFixit. For a full teardown visit www.ifixit.com/device/fairphone



This is copper



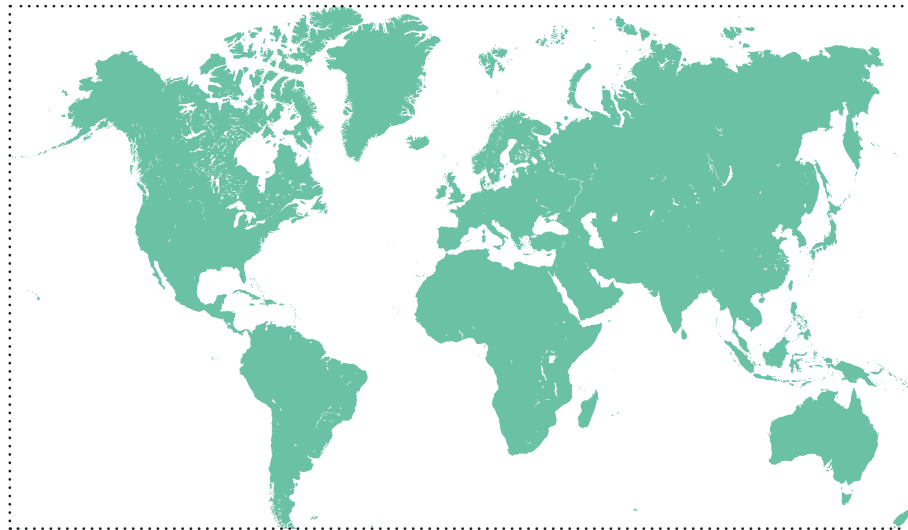
Which component(s) contain copper?

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What is the function of the component in the phone?

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Where does copper come from?



Is copper a conflict mineral?

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Are there issues related to working conditions in the mines? What are they?

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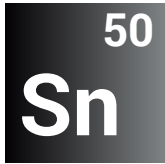
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Is copper recyclable?

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This is tin



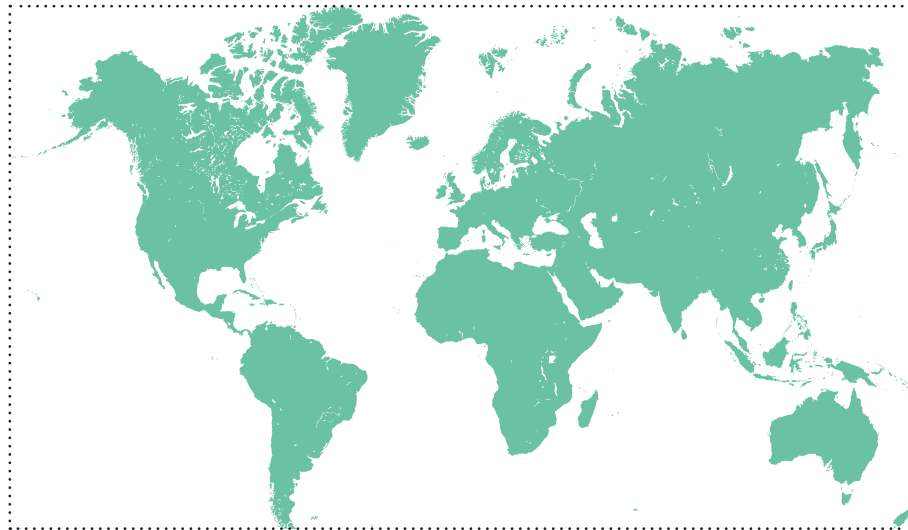
Which component(s) contain tin?

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What is the function of the component in the phone?

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Where does tin come from?



Is tin a conflict mineral?

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Are there issues related to working conditions in the mines? What are they?

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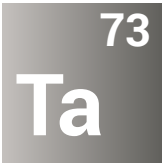
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Is tin recyclable?

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This is tantalum



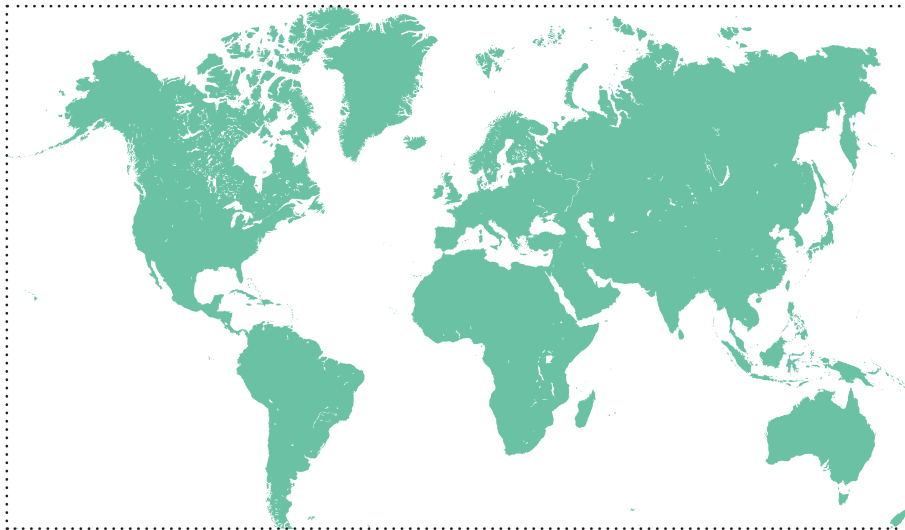
Which component(s) contain tantalum?

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What is the function of the component in the phone?

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Where does tantalum come from?



Is tantalum a conflict mineral?

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Are there issues related to working conditions in the mines? What are they?

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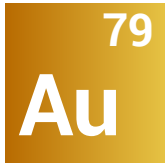
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Is tantalum recyclable?

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This is gold



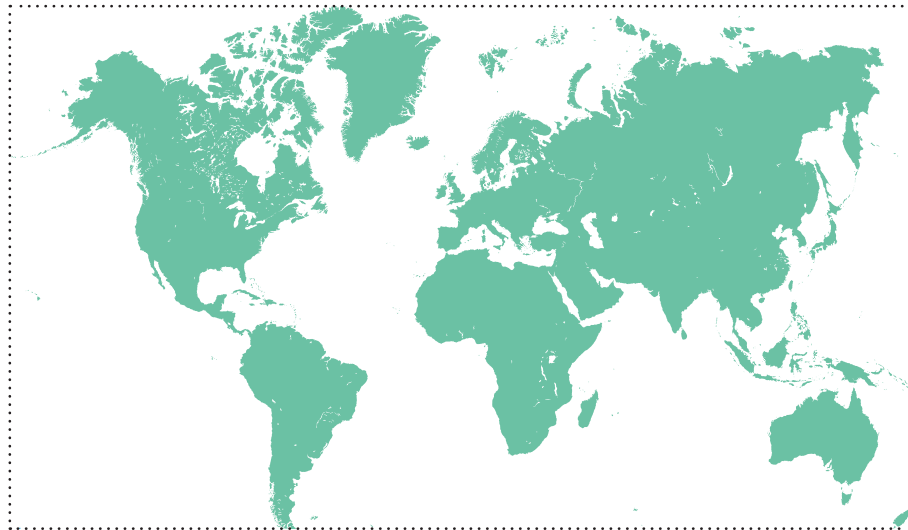
Which component(s) contain gold?

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What is the function of the component in the phone?

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Where does gold come from?



Is gold a conflict mineral?

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Are there issues related to working conditions in the mines? What are they?

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Is gold recyclable?

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The next steps; recycling the parts

Use devices as long as possible or give them a second life elsewhere

Bring devices in their end-of-life to a designated recycling point
In the Netherlands, this is Nederland ICT

Ask producers questions, choose wisely

Spread the word, grow a community, take action together





#WeAreFairphone

Take a photo and share it with Fairphone on
Twitter @Fairphone #UrbanMining