Explore the story behind your phone

Fairphone urban mining manual
What is going to happen?

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Urban mining

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.
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

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

A camera
You'll want pictures of this

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.

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

What is the function of the component in the phone?

Where does copper come from?

Is copper a conflict mineral?

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

Is copper recyclable?
This is tin

Which component(s) contain tin?

What is the function of the component in the phone?

Where does tin come from?

Is tin a conflict mineral?

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

Is tin recyclable?
This is tantalum

Which component(s) contain tantalum?

What is the function of the component in the phone?

Where does tantalum come from?

Is tantalum a conflict mineral?

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

Is tantalum recyclable?
This is gold

Which component(s) contain gold?

What is the function of the component in the phone?

Where does gold come from?

Is gold a conflict mineral?

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

Is gold recyclable?
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.