Mobile phone: Workshop 2

Learning Objectives

Learners will

- develop knowledge of mobile phone production and its positive and negative impacts, both locally and globally
- think critically about the positive and negative impacts of mobile phone production and mobile phone use
- identify the positive change that can be achieved even in the most difficult of circumstances.

Why mobile phones?

Mobile phone usage is increasing, and technology is developing rapidly, but at what cost? And to whom? There are both positive and negative aspects to the global industry of mobile phones and related technologies. There is a direct connection between our consumer appetite and the lives of the people who make these products.

Resources

- PowerPoint Mobile Phones
- Video showing all the elements in the phone
- Conflict Minerals 101 – Enough (Raise hope for Congo)
- Blood in the Mobile Trailer (2:47)
- China case study materials
  - Apple making positive changes in China?
  - Foxconn Suicide Protest against working conditions
  - Inside the Chinese factories
- Oxfam's Pink Phone Revolution (Empowering women in Cambodia) article or video
- Taking action case studies
  - What's in our stuff
  - Fair Phone
  - Green Touch
  - Phonebloks,
  - Toxic Links.
  - Practical Action

Optional resources

- UNICEF Needs and Wants cards
- Six Steps of Mobile Phone Production (includes CNN video 5mins)
- Film giving summary of positive ChangeMakers from DRC
- Guardian article about Blood in the Mobile film

Starter (Slide 1-2: 15 minutes)

Introduce learning objectives and session.

Using questions on slide 2 (adapted from ***Practical Action***), ask learners to stand on an agree/disagree continuum based on their agreement with the statements and hold a discussion based on the results.

- I like to have the latest technological gadgets and don't really think about what happens to the old ones
- I'm not bothered that the technologies I use cause problems for people involved in producing the product
- Everyone should have access to the technology they need, even if they can't afford it
- It's impossible to get by without a mobile phone
- Scientists and engineers should be given incentives to create technology that helps poor people and doesn't harm the environment
- Scientists and engineers should be free to create whatever technology they want
- I don't really know much about where my mobile phone and other technology comes from

Activity 1: You and your mobile (Slide 2)

Ask the learners: Who has a phone? In groups or pairs ask learners to discuss their mobile phones, noting the positive and negative impacts, sticking them on a 'positive' and 'negative' wall. Keep this 'wall' available throughout the session and give learners opportunities to add to the wall as they go through activities.

In groups, ask learners to come up with a list of things that they need – that they couldn't live without. Ask them to negotiate until they agree in their groups. Discuss as a class any points of disagreement. **Optional resource:** Use the UNICEF Needs and Wants cards to facilitate the needs/wants activity discussion – ask learners to categorise the cards into things they need and things they want, and to add anything they think is missing.

As a follow up question, take a poll: "**Is your phone something you want or something you need**?" Discuss

Optional extension activity

Ask learners to prioritise the needs and wants cards according to what is important to them. Can they agree on priorities? Why/Why not?

Activity 2: What makes a mobile? (Slide 4-5)

Ask learners to look at their mobile phones and to list what they think is in them – they can think about different parts (keys, speaker, mic) and the components of those parts (plastic, etc).

Now watch this video showing all the elements in the phone – students can compare their lists to the items in the video (Sheffield Hallam).

Go through slides 4-6 briefly showing the life-cycle of the mobile phone and watch this video to summarise up until 5.08 minutes. Look through slides 7-9 about these stages and ask learners to add positives and negatives to the wall

Activity 3: Where the mobile parts come from: Focus on Democratic Republic of Congo (DRC) (Slide 6-7)

We've looked at some of the minerals in a mobile phone, and where they come from. One big producer of the minerals for mobile phones (and other electronics) is the Democratic Republic of Congo (show on map).

Ask learners to work in small teams to complete the true/false quiz on the slide – give answers and discuss background information.

Show TED talk by Bandi Mbubi (from Congo Calling) and ask the learners to note 3 things they learnt from the video. Discuss learning points and questions.

Now watch 2 films introducing conflict minerals in DRC:

Conflict Minerals 101 (until 3.03mins - produced by the Enough Project). This explains clearly which minerals we're talking about, where they're found (DRC) and how they're used to fuel conflict.

Blood in the Mobile film trailer – documentary looking at impact of conflict minerals in DRC (available to buy here).

Ask students to consider the following questions while watching the films:

- What negatives about mobile phones come out of watching the films?
- What are the key phrases they pick up from the films? e.g. "The most dangerous place on earth to be a woman or a girl."
- Who are the winners and losers of the mobile phone industry?
- What part do we play in the problem and solution?

Following the discussion, add things to the positive and negative impact wall.

Extension: Learners can read a Guardian article by the documentary maker for background information.

Activity 4: Where the mobiles are made: Focus on China (Slide 8-11)

We're now going to look at the next stage in the process – taking the refined minerals (metals) and turning them into the phones (and other electronic items). Much of this takes place in China.

Ask learners to work in small teams to complete the China true/false quiz on the slide – give answers and discuss background information.

Case Study Foxconn:

We're going to focus on Foxconn – the supplier for all the major electronics firms (including Apple, Microsoft etc.)

In small groups, ask the students to analyse one of the news articles below. Ask them to come up with 2-3 key points from their article to share with the rest of the group.

- Apple making positive changes in China?
- Foxconn Suicide Protest against working conditions
- Inside the Chinese factories

Add any positives/negatives about phones to the wall.

Activity 5: Mobile phones for good (slide 12)

We've looked at a lot of the negatives of mobile phones, but we've also noted some positives. Revisit the positives wall. Let's look at just one example of how mobile phones are being used to support people in poorer countries.

- Read about Oxfam's Pink Phone Revolution (Empowering women in Cambodia) or watch this video about it

Activity 6: What can you do? (slide 13)

We've established that mobile phones have good and bad points, and they are certainly not going away, so how can we make a difference to how they are made, used and disposed of so the human and environmental impacts are not so terrible?

Ask learners to watch/read about an organisation/campaign/technology for change listed below and then report back to the rest of the class.

- Video from 5.08 onwards (continuation of earlier video)
- Fair Phone is the first fairly traded and produced mobile phone!
- Green Touch, a consortium dedicated to transforming communications to significantly reduce the carbon footprint of our devices, platforms and networks.
- Phonebloks, which tries to reduce global e-waste by creating a modular phone.
- Organisation, Toxic Links, which calls for environmental justice and freedom from toxins.
- Website of Practical Action who campaign for technology justice

Key questions to consider

- What is the intervention/campaign?
- Who is doing it?
- How will this help?
- How effective do you think this could be?
- Is this something you could get involved in? Why/Why not? How?

Plenary (slide 14)

Ask learners to work in pairs to think about any actions they could take based on the session today, from supporting one of the campaigns discussed to thinking about their own use of technology (reuse, recycle, refuse, etc).

Ask learners to complete the following table (can be done individually or collectively:

Know	Want	Learnt	Surprise
What do we already know?	What do we want to know?	What have we learned?	What surprised you?

Additional resources for research and background reading

Ecology and the environment:

- http://learning.cat.org.uk/en/component/content/article/31 : A resource that explores what the Eco-footprint of a product is and helps to explain the many and varied impacts of a product through materials such as activity cards.
- http://earthobservatory.nasa.gov/IOTD/view.php?id=77723 : two aerial pictures of a mine in China taken by NASA in 2001 and 2006 enables a visual comparison of the mine's effect on the surrounding environment.
- https://www.theguardian.com/global-development/poverty-matters/2011/dec/29/bolivia-green-energy-superpower-lithium : An article that zooms in on Bolivia's lithium reserves, deemed as a green mineral, and the controversy surrounding its exploitation.
- http://www.lithiummine.com/lithium-mining-in-bolivia : Another written piece which looks at the potential lithium mines in Bolivia, highlighting what the country could benefit from them.
- http://www.dailymail.co.uk/home/moslive/article-1166387/In-search-Lithium-The-battle-3rd-element.html : An article that looks at how lithium could solve the global problem of energy and the problems encountered when trying to mine it.
- http://www.omcpower.com/ : Three different videos (1 minute, 2 minutes and 8 minutes in length) introducing us to a renewable energy company, OMC, that builds small-scale power plants with renewable sources where there is no reliable power grid today. (can browse their website for more resources)

Components of the phone and conflict minerals:

- https://www.foe.co.uk/sites/default/files/downloads/tin_mining.pdf : A PDF resource that follows an investigation into tin mining for mobile phones that examined the cost of tin mining on the workers and the environment, Apple and Samsung's role in relation to tin mining and finally proposed solutions to improve the situation.
- http://www.enoughproject.org/publications/mine-mobile-phone : A PDF resource from 2009 that studies how conflict minerals end up in your mobile phone by following every step of the minerals' journey.
- http://www.bgs.ac.uk/research/highlights/2010/rare_earth_elements.html : A webpage from the British Geological Survey that takes a closer look at some of the rare minerals found in technology today, describing their uses, geology, mining, processing and trade
- http://www.whatsinmystuff.org/links/ : A list of links to other resources in relation to both the scientific and material side of the issue as well as the artistic and design aspect.
- http://www.pwc.com/resourcescarcity : A resource that takes a closer look at the scarcity of many minerals and how data information, recycling technology, substitution technology and regulation are needed to prevent the disappearance of these crucial materials.
- http://electronics.howstuffworks.com/cell-phone.htm : A 16 page long webpage that details the different functions of a cell phone and how each of them works.
- http://electronics.howstuffworks.com/cell-phone-pictures.htm : A slide show of pictures each depicting a certain type of phone from the IPhone to a disposable cell phone and listing each mobile phones unique features.

The life cycle of a phone and e-waste:

- http://learning.cat.org.uk/en/resources : A range of various resources, in particular the "What do you need" activity which looks at the issues of needs and wants.
- http://www.grida.no/publications/vg/waste/ : A UNEP collaboration with a variety of useful images of different materials, their extraction, use and disposal going far beyond recycling. (first part)

- http://www.grida.no/publications/vg/waste2/ : A UNEP collaboration with a variety of useful images of different materials, their extraction, use and disposal going far beyond recycling. (second part)
- http://www.simsrecycling.com/Services/Mobile-Devices : An infographic that gives interesting statistics and numbers regarding mobile phone recycling in Britain.
- http://spectrum.ieee.org/energywise/energy/environment/smart-phones-uses-as-much-energy-as-a-refrigerator : An online report that takes a closer look at the energy consumption of a smartphone, even claiming that over a one year period a smartphone consumes more than a refrigerator.
- https://www.youtube.com/watch?v=BaPf4ZIbDVM : A 3 minute video that follows Phonebloks on the next step of its journey as it grows from being a concept from being an actual project.

Working conditions in the tech industry

- https://en.wikipedia.org/wiki/Foxconn_suicides : A Wikipedia page discussing the Foxconn suicides, and their link to the factory's working conditions.
- http://tinyurl.com/7dnn4we : A newspaper article that also examines working conditions in the Foxconn factories in China.