Website Content

**HOME PAGE**

**Hero section:**

Recycle your mobile this summer and we’ll donate a meal to someone in need through OzHarvest

<insert campaign image simile face to sit beside text>

**Text with location search**

### ***Old Text***

### MobileMuster is a non-profit program that recycles unused mobile phone for free. Find your nearest drop-off point...

***Updated text***

The MobileMuster program makes it easy to recycle any mobile phone for free. Find your nearest drop-off point.

**Green Boxes (update Box 2)**

## Box 2: How to recycle. Keeping your personal data secure.

**Green Boxes (update Box 3)**

Box 3: Book in a collection. (links to - https://bookings.mobilemuster.com.au/)

MobileMuster delivers a free mobile phone recycling program to everyone. We work with workplaces, retailers, local councils and schools to make recycling easy and accessible.

**Light Green Boxes** (can we use some of the new icons here, replacing the ticks). Update the following.

* **Recycled over 11 million mobiles & batteries**. Smaller Font: View our latest results (click through to latest annual report)
* **Saved 1,323 tonnes from landfill** Smaller Font – Learn more about the benefits of recycling
* **A 99% Recovery Rate** Smaller Font. Smaller Font Find out what happens when you recycle with us (click through to Recycling menu)
* **Over 3,500 drop off points**. Smaller Font – Find your nearest drop off point (click through to store locator)

**DID YOU KNOW? (Green Banner)**

Include an image on the banner to the right hand side to break up the text or split the banner image below text above?

Bottom Green Banner

The mobile phone industry is committed to product stewardship and reducing our environmental footprint.

If an image works here – could we include same style as above banner.

**MOBILE FOR A MEAL: CONTENT PAGE**

Recycle your mobile this summer and we’ll donate a meal to someone in need through OzHarvest, Australia’s leading food rescue organisation. Terms and Conditions apply. (Create page and Hyperlink to Terms and Conditions Mobile for a Meal)

<http://www.mobilemuster.com.au/news/terms-and-conditions-mobile-for-a-meal/>

Help us recycle 70,000 mobile phones by the end of February so that we can deliver 70,000 meals to people in need across the country.

To recycle drop off your mobiles and accessories at any of the below retail stores or find your nearest collection point here (link to search function to appear). The retail logos could be in black/white to match the website.



**Resources**

Download the posters, social media image and video to help promote the Mobile for a Meal campaign in your workplace. If you need any further information [**contact us.**](http://mobilemuster.com.au/contact-us/)

[Poster](http://mobilemuster.com.au/media/135335/mob_campaign_mobileforameal_posterfa.pdf) (<http://mobilemuster.com.au/media/135335/mob_campaign_mobileforameal_posterfa.pdf>)

**Social media image**

<http://www.mobilemuster.com.au/media/135341/mob_mobileforamealfacebook_postv1.jpg>

[**Video**](https://youtu.be/brLeFC9Kfo0) (embed video on page )

<iframe width="560" height="315" src="https://www.youtube.com/embed/brLeFC9Kfo0" frameborder="0" allowfullscreen></iframe>

**Mobile Phone Waste Facts**

* There are over 40 million tonnes of electronic waste in the world which represents over $68 billion of potentially reusable resources. [(1)](http://i.unu.edu/media/unu.edu/news/52624/UNU-1stGlobal-E-Waste-Monitor-2014-small.pdf)
* Australians are among the highest users of technology and produce an estimated 25kg of electronic waste each every year. [(2)](http://recyclingweek.planetark.org/documents/doc-1451-nrw-2016-report-so-you-think-you-can-recycle.pdf)
* In Australia there are over 23 million old unused and unwanted mobile phones and 5 million of these mobiles phones are broken and no longer working.
* 99% of the materials used in mobile phones and accessories can be recovered.

**About OzHarvest**

OzHarvest is Australia’s leading food rescue organisation, rescuing quality surplus food from more than 2,000 businesses, including supermarkets, restaurants, cafes, hotels, retailers, airports and retail food outlets. Every week over 87 tonnes of food is saved from going to landfill and delivered to over 900 charitable agencies, helping to make a positive difference to the lives of vulnerable men, women and children across Australia.

**Food Waste Facts**

* $8-10 billion dollars of food is wasted each year in commercial and residential waste. [(4)](https://www.environment.gov.au/system/files/pages/25e36a8c-3a9c-487c-a9cb-66ec15ba61d0/files/factsheet-food-waste_0.pdf)
* Four million tonnes of food ends up as landfill. [(5)](http://www.environment.gov.au/topics/environment-protection/nwp/reporting/organic-waste)
* One in five shopping bags end up in the bin = $1,036 worth of groceries per household each year. [(6)](http://www.epa.nsw.gov.au/wastegrants/organics-infrastructure.htm)
* 35% of the average household bin is food waste. [(7)](http://www.epa.nsw.gov.au/wastegrants/organics-infrastructure.htm)
* Over 644,000 people now receive food relief each month, one third are children. [(8)](http://www.foodbank.org.au/wp-content/uploads/2016/05/Foodbank-Hunger-Report-2016.pdf)

**ABOUT PAGE**

MobileMuster provides a free mobile phone recycling program that accepts all brands and types of mobile phones, plus their batteries, chargers and accessories. It is the mobile phone industry's way of ensuring old mobile phone products don't end up in landfill - but instead are recycled in a safe, secure and ethical way.

MobileMuster is managed by the [Australian Mobile Telecommunications Association (AMTA)](http://www.amta.org.au/) on behalf of our members.

* Handset manufacturers (Microsoft, Samsung, Motorola, HTC, Huawei, ZTE, Alcatel, Oppo, HMD Global, Google)
* Network carriers (Telstra, Optus, Vodafone, Virgin Mobile)



**Product Stewardship**

MobileMuster is the only government accredited mobile phone recycling program in Australia. The program gained accreditation in 2014 under the [*Product Stewardship Act 2011*](http://www.comlaw.gov.au/Details/C2011A00076) which provides a framework to effectively address the environmental, health and safety impacts of a product or material across its full lifecycle, from manufacture to disposal.

The mobile phone industry is constantly working to reduce the environmental and human health impacts of their products, across their entire lifecycles. This includes:

* Improving how efficiently resources are used in the production of mobile phones.
* Ensuring that mobiles collected are recycled to the highest environmental standards.
* Minimising waste in the manufacture, production, use and disposal of mobiles and accessories.
* Reducing risk to human health through better management of product manufacturing and disposal (e.g. ensuring safe work environments).

**Our Commitment to Product Stewardship**

The mobile phone industry is committed to reducing our environmental footprint. For more information and inspiration on how our members are approaching their commitment visit their websites below.

[Alcatel](http://www.alcatel-mobile.com/au/company/aboutCsr) [Google](https://environment.google/) [HMD Global](https://www.nokia.com/en_int/about-us/sustainability) [HTC](https://www.htc.com/au/about/corporate-responsibility/) [Huawei](http://www.huawei.com/au/sustainability) [Microsoft](https://www.microsoft.com/en-us/environment/default.aspx) [Motorola](https://www.motorola.com/us/about/corporate-responsibility-environment) [OPPO](https://www.oppo.com/au/about-us/) [Samsung](http://www.samsung.com/au/aboutsamsung/samsungelectronics/companyReports/companyreports_02/) [ZTE](http://www.zte.com.cn/global/about/citizenship/CSR-Reports)

[Telstra](https://www.telstra.com.au/aboutus/community-environment/environment) [Virgin Mobile](https://www.virginmobile.com.au/about-virgin-mobile/) [Vodafone](https://www.vodafone.com.au/about/sustainability/) [Optus](https://www.optus.com.au/about/sustainability)

#### ****Latest Achievements****

The industry has invested over $42 million into the program which has recycled over 11 million handsets and batteries since it was established in 1998.

In 2017 the program collected and recycled 79 tonnes of mobile phone components including over one million handsets and batteries. Since 1998 over 1,323 tonnes of mobile phone components have been collected and recycled.

In the last year, the program diverted 99% of the components collected from landfill. The recovered materials was returned to the supply chain to be used in the production of new products.

#### MobileMuster provides an extensive collection network with over 3,500 public drop off points across the country along with a free post back option. The program also partners with workplaces and schools who promote mobile phone recycling to their staff and community, along with running internal collection drives.

#### Annual Reports

* [2017](http://www.mobilemuster.com.au/media/135343/mob_annualreport-2016-17final.pdf) and [Appendix](http://www.mobilemuster.com.au/media/135344/mobappendix-2017_final.pdf)

#### [2016](http://www.mobilemuster.com.au/media/134587/annual_report.pdf)

* [2015](http://www.mobilemuster.com.au/media/113634/mob0192_fy15_annualreport_fa_digital.pdf)
* [2014](http://www.mobilemuster.com.au/media/62405/mm_annualreport_2014.pdf)
* [2013](http://www.mobilemuster.com.au/media/39176/mobilemuster_annualreport_2013_lr.pdf)
* [2012](http://www.mobilemuster.com.au/media/21563/amt0225_mobilemuster_report_2012_final.pdf)

**Publications and Useful Factsheets**

#### [Australia’s Mobile Decade: 10 Years of Consumer Insights into Mobile Use and Recycling 2005-2015](http://www.mobilemuster.com.au/media/107666/australia_s_mobile_decade.pdf) (October 2015)

* [Industry Initiatives to Reduce Use of Coltan](http://www.mobilemuster.com.au/media/46313/mobile_telecommunication_industry_initiatives_to_reduce_use_of_coltan_co....pdf)(May 2014)
* [Fact Sheet: Product Stewardship Act 2011](http://www.environment.gov.au/system/files/resources/3947fa3a-8404-472c-92c9-1745e6954558/files/fs-product-stewardship-act.pdf)
* [Voluntary Product Stewardship Arrangements (Department of the Environment)](http://www.environment.gov.au/protection/national-waste-policy/product-stewardship/voluntary-product-stewardship)
* [Product Stewardship - Taking Responsibility (PlanetArk)](http://recyclingweek.planetark.org/documents/doc-1211-product-stewardship-factsheet.pdf)

**NEWS PAGE**

**Hero Section:**

**Heading: Recycle your mobile and do some good this summer (same as home page – insert image)**

****

News story 1 – dated 1 December

We all have one; a little rough around the edges, not as cool as they used to be, or maybe you’ve upgraded to the latest model, they are simply old, broken, and unwanted. We’re talking about mobiles, millions in fact.

Around Australia there are almost 5 million old mobile phones which are no longer working, along with their chargers and accessories, begging to be lifted out of the junk drawer and be put to better use, which is exactly what Australian’s can do this summer.

Not for profit’s MobileMuster and OzHarvest have teamed up to give Australians a great reason to recycle their old phone, because this summer for every mobile recycled they will deliver a meal to someone in need.

The campaign, *Mobile for a Meal*, returns for a second year after a hugely successful recycling drive last summer, where 60,000 meals were delivered simply by people recycling their old mobile, this year they are aiming to recycle 70,000 and help deliver 70,000 meals to those in need.

“It is one of those beautiful win-win situations where no one wants these old phones - you can’t use them, or sell them - they are quite literally useless, but if we recycle them over 99% of the material can go back into making new products. In return, we will deliver a meal to someone in need,” said Spyro Kalos, Recycling Manager, MobileMuster.

“It’s important to remember that mobile phones are not biodegradable, and they contain substances and materials that can potentially harm the environment if not recycled responsibly,”

And it’s very easy to recycle your old mobile phone when it comes to the end of its life as there are over 3,5000 public collection points around Australia,” said Kalos.

OzHarvest’s Founder, Ronni Kahn said the demand for food is on the rise. “There are now more than 3.6 million people experiencing food insecurity each year. At OzHarvest we are doing our best to deliver to good, nutritious food to people in need, but many agencies say they could take double to keep up with demand. With as little as $1 we can deliver 2 meals, so make sure you give your old mobile a new purpose.”

**RECYCLING PAGE**

There are a number of ways you can recycle your mobile phone with MobileMuster. Remember to remove any data that you would like to keep before you recycle.

1. Drop them off at participating mobile phone retailers or search for your nearest collection point.

<insert retail logos in black and white like annual report>



<insert postcode search>

1. Post them for free using our mailing label. Follow the instructions and attach the label to a padded envelope or box.

< insert download mailing label pdf>

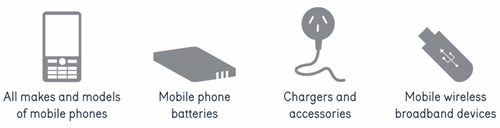
http://www.mobilemuster.com.au/media/135250/mobilemuster-mailing-label.pdf

1. Use a free MobileMuster satchel. These are available at your nearest AusPost outlet.

When we receive your mobiles and accessories, everything will be recycled in a secure and safe process to the highest environmental standards. Nothing will be resold and any data left on mobiles will be destroyed through the recycling process.

**What is accepted?**

<insert placeholder icons – new icons are currently being designed>



**Data management tips**

Before you recycle, sell or give away your mobile phone, you should remove your personal information. If your mobile phone is still working we encourage you to take the following steps.

1. **Back up your data.** Back up or transfer files and information you want to keep to a computer or online storage. Check to see if you can access your manufacturer’s software to complete the process.
2. **Log out.** You may be using a number of online accounts and social media. You will need to log out of these platforms through the administration and security settings.
3. **Perform a Reset.**A reset will erase all the data from your device’s internal storage. Depending on what type of mobile phone you have, the instructions will vary. We recommend that you check the user guide or instructions on the manufactures website. Here are some useful links:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [Alcatel](http://www.alcatel-mobile.com/global-en/support) | [HTC](http://www.htc.com/au/support/) | [LG](http://www.lg.com/au/support/smartphones) | [Nokia](https://www.nokia.com/en_int/phones/support?utm_content=nokia-nav) | [ZTE](http://www.zte.com.au/telstra/zte-support.htm) |
| [Apple](https://support.apple.com/en-au/iphone) | [Huawei](http://consumer.huawei.com/en/support/index.htm) | [Microsoft](https://support.microsoft.com/en-au/products/mobile-devices) | [Samsung](http://www.samsung.com/au/support/category/mobile/mobiledevice/) | Pixel/Google |
| [Blackberry](https://global.blackberry.com/en/support) | Oppo | [Motorola](https://motorola-global-en-aus.custhelp.com/app/home) | [Sony](http://support.sonymobile.com/au/) |  |

1. **Remove the SIM card and memory card.**Transfer any files that you have stored on the memory and SIM card. Once the data is removed they can be reused or recycled depending on your intentions.

## **Recycling**

If your mobile phone is broken and you are unable to remove your data don’t let that stop you from recycling. MobileMuster ensures that any data left of your mobile phone is destroyed during the recycling process, so you can feel confident no one can access your information in the future.

## Need help?

Talk to your local mobile phone network provider to see what data management services they offer in store. Please note that some of these services may include a service fee. Useful links:

* [Optus Device Help](http://devicehelp.optus.com.au/web/)
* [Telstra Store - Tech Bar](https://www.telstra.com.au/telstra-store/tech-bar/booking.cfm)and [Telstra Platinum Services](https://www.telstra.com.au/connectedhome/enhancements/platinum)
* [Vodafone Device Guide](http://devices.vodafone.com.au/web/)

## Disclaimer

#### ***While we make every effort to ensure that the material and information on this website is accurate and up-to-date when published, it is general information intended as a guide only. Please keep in mind that you are responsible to ensure that any personal information has been erased from your mobile device. If needed, seek advice relevant to your mobile phone from the manufacturer.***

**Reuse Options**

More people are reusing their mobiles than ever before. MobileMuster estimates that one in ten Australians selling or trading in their mobiles, and one in six will give their unwanted mobiles to family or friends. Reuse helps extend the life of a mobile phone and gives people better access to communication who may not be able to access it through the purchase of a new mobile.

## How to reuse your old mobiles?

If you'd like your mobile to be reused, there are a few ways you can go.

1. Repair it. Most manufacturers have service centres who will be able to tell you if your mobile can be repaired.
2. Pass it on. Maybe you have a family member of friend who needs a mobile. Ask around.
3. Donate it for reuse by people in need. Certain charities in Australia provide secondhand mobiles to those who can't otherwise access them. Just be sure to check out the charity and ask how the mobile will be used.
4. Donate to charity. Many charities have partnered with mobile phone resellers to raise funds for their organisation. Most of these mobiles will be sold overseas into developing countries for reuse.
5. Sell it. There are companies who offer cash in return for old mobiles. Most of these mobiles will be sold overseas into developing countries for reuse.
6. Check out eBay. Visit [eBay](http://www.ebay.com/s/phone) and see how much your phone may be worth. Thousands of new and pre-loved phones are sold at eBay each day so it’s a great place to list your phone for sale.

If you are looking at donating or selling your mobile remember to remove any data. If you are selling it ensure the data will be wiped before it is reused, plus enquire where your mobile will be reused and if overseas what will happen to it when it can no longer be used.

## Reuse Partners

MobileMuster is the recycling partner with many of the commercial reuse programs in Australia. We want to ensure that any mobiles and accessories which have no resale value are recycled in a safe, secure and ethical way. Our reuse partners include:



Many of the reuse programs collect old mobiles on behalf of charities and share the funds raised through the resale process. MobileMuster supports the charity partners by contributing $2 per kilo for any mobiles and accessories that are unable to be resold.

## 

**HIDDEN PAGE**

**Recycling with MobileMuster – Terms and Conditions**

*On any pages that provide information on recycling (i.e. download a mailing label and search for your drop-off point) should include a hyperlink to Our Recycling Terms and Conditions. For example*

* *“By printing our mailing label, you accept the Terms and Conditions of the program.”*
* *“By sending us a MobileMuster satchel, you accept the Terms and Conditions of the program.”*
* *“By dropping-off a mobile phone through our collection network you accept the Terms and Conditions of the program.”*

**Terms & Conditions – this hidden page only accessible via link.**

The Australian Mobile Telecommunications Association (MobileMuster) has no responsibility for the loss or confidentiality of customer data on a mobile phone that is dropped off or sent to MobileMuster. Before you recycle your mobile, you should:

* Remove or transfer any data off the device that you would like to keep.
* Back up or transfer any data prior to deleting anything you no longer require.
* Remove any removable SD cards and SIM cards and damage them beyond use.
* Keep all batteries within the device, any loose batteries should be packaged in plastic before recycling.
* Mobile phone batteries that are corroded or leaking should not be posted or dropped off in the MobileMuster collection points.
* Where possible run the battery flat in devices.

By recycling with MobileMuster you are agreeing to these terms and conditions.  Once you have posted or dropped off items for recycling, MobileMuster cannot return it to the customer.  Participation in MobileMuster constitutes a relinquishment of all rights to and in the hardware and other related sent or dropped off to MobileMuster.

**What is Accepted:**

All brands of mobile phones, mobile phone batteries only, accessories and chargers, mobile wireless modems, and smart watches.

**Limitation of Liability**

MobileMuster provides a free take back recycling program for mobiles phones and their accessories, the program accepts no liability to any persons for any services performed in connection with the recycling offered in these terms and specifically disclaims liability for lost profits, loss of business or other consequential, special, indirect or punitive damages, even if advised of the possibility of such damages.

**EDUCATION PAGE**

**Subtitle: Educating Australians about recycling and the benefits it bring to the community.**

## **What Happens: The Recycling Process**

#### MobileMuster partners with [TES](http://www.tes-amm.com.au/), a global leader in electronic waste recycling, to maximize recovery rates and ensure all the mobile phone components are processed in an environmentally responsible manner. Through our recycling over 96% of the materials in a mobile phone are recovered. This process reduces the impact of mobile phones on the environment, minimises the resources that are thrown away and promotes the development of a circular economy.

## Step 1: Transporting

#### When you drop off your old mobile phones for recycling they are collected and transported to TES’s recycling facilities in Melbourne, Sydney or Brisbane.

## Step 2: Sorting

#### At the recycling facility the mobile phones are disassembled into their components. Nothing collected by the program is resold. Once disassembled the parts are sorted into the following: batteries, printed circuit boards, handsets, accessories, plastics, metals and packaging.

## Step 3: Processing

#### The components are processed separately to maximise resource recovery. Any data left on the device is destroyed through this process.

|  |  |  |  |
| --- | --- | --- | --- |
| **Components** | **Transported to** | **Further processing** | **Materials recovered** |
| Batteries | Envirostream Melbourne | Batteries are shredded, granulated and sorted into materials. | Copper, Aluminum, Cobalt, Nickel, Lithium and Plastics. |
| Circuit Board | TES Singapore | A hydro-metallurgical metals recovery process separates the precious metals. | Copper, Silver, Gold, Palladium, Metal Ingots |
| Metals | Local recyclers | Shredded and baled. | Copper, Stainless steel, Aluminum |
| Plastics | TES Singapore | Shredded and granulated. Combined with spent epoxy powder to make new products. | Recycled Plastic |
| Glass | TES Singapore / Veolia | Shredded and sorted. | Recycled Glass |
| Accessories | TES Singapore | De-manufactured through shredding and automated separating methods. | Plastics, Ferrous and Non Ferrous Metals |
| Packaging | TES Australia | Segregated and treated as commodities. | Recycled Paper and Plastic |

## **Step 5: Materials Extracted**

#### The materials recovered in the recycling process can be used in the manufacture of new products. For example the recycled plastic from the mobile phone cases is used to make shipping pallets and the lithium extracted from mobile phone batteries can be reused to make new batteries.

#### The recycling process reduces the need to extract virgin material from the earth which saves energy, conserves scarce natural resources and protects our environment.

## **More information**

TES is widely recognised as a global leader in electronic waste recycling. Their e-waste recycling facilities utilise state of the art equipment and processing techniques aimed at delivering the lowest possible environmental impact. They invest in research, development and technology that maximises recovery of commodities and raw materials for reuse. TES maintains international best practice certifications; R2 (Responsible Recycling), ISO 9001, 14001, 27001, 28000, OHSAS 18001, and TAPA.

## **Why recycling matters**

By recycling your mobile, you'll be avoiding future greenhouse gas emissions, saving energy, protecting the environment and conserving natural resources. You're also preventing potentially hazardous materials from entering the environment.

The environmental effects of recycling mobiles

## Did you know……

* 99% of the materials used in mobiles and accessories can be recovered through recycling
* These materials can be used to make everything from stainless steel to plastic pallets.
* Mobiles should never be thrown out. They're not biodegradable and contain some materials that can potentially harm the environment if not handled correctly at the end of a phone's useful life.
* Recycling 50,000 handsets can remove the need to mine gold, silver and copper ore. Pretty precious stuff.
* For every tonne of mobile phone components recycled 9 tonnes of greenhouse gas emissions are avoided.

**Resources**

***MobileMuster Promise***

MobileMuster's promise to keep old mobile phones out of landfill by recycling them and recovering the materials in them to live on as new products.

Embed video

<iframe width="560" height="315" src="https://www.youtube.com/embed/oPdTMpNDpwk" frameborder="0" allowfullscreen></iframe>

***How to manage data when recycling your mobile***

Before you recycle, sell or give away your mobile phone, you should remove your personal information.

<iframe width="560" height="315" src="https://www.youtube.com/embed/bUKD23zSRuI" frameborder="0" allowfullscreen></iframe>

***What type of hoarder are you?***

Australians continue to hold on to their old mobiles, many of which are no longer working. Learn more about why we find it hard to let go.

<iframe width="560" height="315" src="https://www.youtube.com/embed/da0ZlDZQRLk" frameborder="0" allowfullscreen></iframe>

Educators

Our learning resources are aligned to the Australian curriculum and designed for early learning, primary and secondary students.

*Learning Modules*

We have lots of resources available to help you teach your student about:

* How mobile phones are made (Stage 3) – link to page below.
* Recycling mobile phones - http://www.mobilemuster.com.au/schools/teachers-guide/recycling-mobile-phones/
* Product stewardship - http://www.mobilemuster.com.au/schools/teachers-guide/product-stewardship/
* How to run a muster - http://www.mobilemuster.com.au/schools/teachers-guide/how-to-run-a-muster/
* The sustainable smartphone - http://www.mobilemuster.com.au/schools/teachers-guide/the-sustainable-smartphone/

*Get Involved*

#### If you want to run a muster at your school or receive our quarterly newsletter you can register as a collection site <link to partners page and registration form>.

**How mobile phone are made**

## Did you know: There are more mobile phones in the world than there are people? So everyone has a responsibility to make sure they recycle their old mobiles phones and don't let them go to waste.

## **Lesson Objective**

#### In this module students will appreciate and understand the variety and quantity of resources that come together to manufacture a mobile phone. Students will be introduced to the idea that products have life cycles and will be encouraged to consider the impact of the product life cycle on the environment.

#### ****Australian Curriculum Content Description****

|  |  |
| --- | --- |
| **YEAR 5 SCIENCE** | **YEAR 6 SCIENCE** |
| * Scientific knowledge is used to inform personal and community decisions [(ACSHE217)](http://www.australiancurriculum.edu.au/Search?q=ACSHE217) * Important contributions to the advancement of science have been made by people from a range of cultures[(ACSHE082](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE082)) * Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives ([ACSHE083](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE083)) | * Electrical circuits provide a means of transferring and transforming electricity ([ACSSU097](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU097)) * Important contributions to the advancement of science have been made by people from a range of cultures ([ACSHE099](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE099)) * Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives ([ACSHE100](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE100)) * Scientific knowledge is used to inform personal and community decisions ([ACSHE220](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE220)) |

**Lesson Outline**

1. Discuss the different stages of the mobile phone life cycle.
2. Divide the students into five groups and assign each group with one stage of the product life cycle.
3. Ask each group to produce a presentation of their stage of the product life cycle.
4. As part of the presentation they need to investigate the social, environmental and economic benefits and costs at each stage of the product life cycle.
5. The work can be presented as an oral activity, flow diagram, poster, Prezi or Powerpoint presentation.
6. When all groups have produced their presentation, they can present it to the class as ‘experts’ on that stage of the mobile phone life cycle.

Information Sheet: Mobile phone life cycle

Understanding how mobile phones are manufactured can help you make environmental choices about the products you use, and how you dispose of them. Like any product, making a mobile phone uses natural resources and energy.



Extracting materials

To make mobile phones, manufacturers first need to extract raw materials from the earth. They are then used to make each component of the mobile phone. The main components include:

* Circuit Board. This is the ‘brain’ of the phone, like a computer. They consist of many wires or circuits made of metal, located on a plastic or fibreglass board.
  + Crude oil is extracted from the earth to make plastics, silicon and other materials to that are used to make the circuit boards.
  + Metals such as copper, gold, lead, nickel, zinc, beryllium, tantalum and other metals are mined from the earth to make components that are used to make the board.
  + Many of the raw materials that are used in the manufacturing of the circuit board contain substances that can be potentially harmful to the environment if they are buried in landfill.

<insert image of circuit board>

* Smartphone screen. The screen allows you to see the phone’s display and give the user a personal connect with your mobile phone. It is designed to be extremely tough and sensitive to your touch. The screen is usually made from a combination of glass and ceramic that is stronger than each of the materials by themselves.
  + Glass is made from resources that are extracted from the earth like oil, sand and liquid crystalline materials are non-renewable.
  + Gorilla Glass is composed of an oxide of silicon and aluminum along with sodium ions. The glass is chemically strengthened by being put into a molten bath of potassium salt.

<insert image of glass screen>

Batteries. These power the phone and are usually rechargeable. There are most common types of rechargeable mobile phone battery is lithium-ion

<insert image of a mobile phone battery>

Processing Materials

Once the raw materials have been extracted from the earth they need to be processed in order to make the materials and components that go into a mobile phone. There are approximately 200 components that go into making a mobile phone. These are supplied from companies all around the world.

Manufacturing

Now that all the materials are processed and made into components, the manufacturer can start making the phone.

* The casing for the phone is made from plastic or metal.
* The printed circuit board is made and loaded with the necessary software and operating system. The circuit board is then placed in the casing.
* Next, the other components of the phone are added such as the screen, microphone and speaker.
* After the phone is constructed, it is moved on to testing. During the testing phase, the battery for the phone is added.
* Finally, the necessary documentation for the phone is produced and sent to be packaged with the phone.
* Once all of these components are verified, the phone is packaged and shipped to retail outlets around the world.

## Support Material

* [TED Talks: Sustainability by design](http://www.ted.com/playlists/28/sustainability_by_design.html).
* [Smartphones: Smart chemistry](https://www.acs.org/content/acs/en/education/resources/highschool/chemmatters/past-issues/archive-2014-2015/smartphones.html)
* [Australia’s first lithium-ion batteries](http://www.abc.net.au/news/2017-09-20/qut-creates-australia-first-lithium-ion-battery/8963740)

## Extension Activities

If you were an engineer working for a mobile phone manufacturer and wanted to create a new environmentally sustainable mobile phone, how would you design the phone? In your response consider the entire life cycle of a product — from materials acquisition, materials processing, manufacturing, packaging, transportation, use and disposal of the product.

**PARTNERS PAGE**

MobileMuster partners with a variety of retailers, repair stores, local councils and workplaces across Australia to make it easy and accessible for mobile phone users to recycle in their community.

**What we provide**

* Free collection units that can be used in your retail store, council, school or workplace.
* Education and marketing resources to support your collection drive.
* **A free pick-up and processing service**. When your unit is full, simply book a free pick-up
* Annual reporting on how much your organisation has collected and recycled.
* Monthly news on the MobileMuster program.
* Contact us if you have further questions or require support

Book in a Collection (link to https://bookings.mobilemuster.com.au/)

Complete the form below to register your organisation

|  |  |
| --- | --- |
| **Contact Details** | |
| Organisation Name\* |  |
| Organisation Type (Retailer, Service Centre, Repair Store, Workplace, School, Council) |  |
| Contact First Name\* |  |
| Contact Surname\* |  |
| **Please provide a street address.**We are unable to deliver to a PO Box address. | |
| Shop Number/Level |  |
| Building Name^ |  |
| Street No.^ |  |
| Street Name\*^ |  |
| Suburb\*^ |  |
| State\*^ |  |
| Postcode\*^ |  |
| Contact Number\* |  |
| Other  Number |  |
| Email Address\* |  |
| Website |  |
| Your Local Council |  |
| ^ these fields will be used to generate a location map. | |
| **Other Details** | |
| Would you like your organisation to be listed as a public drop off? | Yes/No |
| How did you find out about MobileMuster? | if Other (please specify) |
| Agreement | |
| |  |  | | --- | --- | |  | \*I have read and agree to [the terms and conditions of participation](http://www.mobilemuster.com.au/terms-and-conditions/) *- Download -* [PDF terms and conditions of participation.](http://www.mobilemuster.com.au/media/6994/amta_733_mm_termsandconditions_may09.pdf) | | |
| |  |  | | --- | --- | |  | \* I agree to confer ownership of all mobile phones and mobile components collected for recycling to AMTA. I will not re-use or re-sell any mobile phones or mobile phones collected on behalf of MobileMuster. | | |

**CONTACT PAGE**

If you are a registered site and need to book in a free pick-up contact our team on **1800 249 113** or by [booking online](https://bookings.mobilemuster.com.au/)**.** For any other matters about the program please use the form below or email us [mobilemuster@amta.org.au](mailto:mobilemuster@amta.org.au)Top of Form

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| First name: |  |
| Last name: |  |
| Email Address: |  |
| Subject (optional): |  |

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| Message: |