



SCIENCE AND
INDUSTRY
ENDOWMENT
FUND



LIVERPOOL
CITY
COUNCIL

STEM Community Partnerships Program

Liverpool local scenario

Recycling and Waste Management

Over 2018-19, NSW households generated a total of 3.66 million tonnes of domestic waste, sending 1.94 million tonnes of residual waste to landfill, with the remaining 1.72 million tonnes being recycled. Most of us are aware of how important it is to recycle and correctly dispose of rubbish to ensure reductions in landfill and to avoid contamination of our environment.

There are many programs designed to encourage us to dispose of waste thoughtfully and correctly – for example, the Return and Earn program is one such initiative. This program started out as a litter reduction initiative and by 2020, NSW had collected more than 4 billion containers in less than two years.

The Return and Earn program is an example of a concept called the circular economy. The circular economy refers to changing the way we produce, assemble, sell, and use products to minimise waste, and as a result, to minimise the environmental impact. The circular economy can also be great for businesses through maximising the use of resources, and by contributing to innovation, growth, and job creation.

In 2012, Australian businesses spent roughly \$24.3 billion on materials that were discarded as part of the development of a product. Businesses in Western Sydney can benefit from developing a local hub where these materials can be shared and utilised for other products. By utilising new technologies, businesses can turn their waste into a profit, as well as provide cheaper resources to other businesses who can use the by-products and repurpose materials that would otherwise end up in landfill.

How your Council tackles the complexity of this issue impacts you and your community, now and in the future.



Your task

Your task is to use the information above and resources provided below as a start to identify a local problem and design a STEM-focussed solution.

(Question, Design, Explore, Communicate)

Resources

CSIRO research

- Circular Economy and Waste Management, CSIRO, December 2020 <https://www.csiro.au/en/Research/Environment/Circular-Economy>
- Circular economy roadmap for plastics, glass, paper and tyres https://www.csiro.au/~media/News-releases/2021/circular-economy/20-00205_LW_CircularEconomySummary_WEB_210119.pdf.

Reports

- Too Good To Waste, NSW EPA February 2019 <https://www.epa.nsw.gov.au/publications/recyclereuse/18p1061-too-good-to-waste-circular-economy-discussion-paper>
- Case study: Liverpool Community Recycling Centre <https://www.epa.nsw.gov.au/working-together/grants/systems-household-problem-waste/community-recycling-centre-program>
- EPA 2014b, NSW Waste Avoidance and Resource Recovery Strategy 2014–21, NSW Environment Protection Authority, Sydney www.epa.nsw.gov.au/wastestrategy/warr.htm

Articles

- Western Sydney cafes choose to reuse, WSROC, November 2019 <https://wsroc.com.au/media-a-resources/releases/western-sydney-cafes-choose-to-reuse>
- Fighting food waste through the circular economy, KPMG, 2020 <https://home.kpmg/au/en/home/insights/2019/12/fighting-food-waste-through-the-circular-economy.html>
- How to turn plastic waste in your recycle bin into profit, The Conversation, January 2021 <https://theconversation.com/how-to-turn-plastic-waste-in-your-recycle-bin-into-profit-147081>
- Aussie recycling worth \$328m a year, Liverpool Champion, September 2019, <https://www.liverpoolchampion.com.au/story/6381136/aussie-recycling-worth-328m-a-year/>
- Vinnies Lavington selling new re/CYCLE range from second-hand donations, Liverpool Champion, June 2020 <https://www.liverpoolchampion.com.au/story/6789720/donations-to-take-on-new-form-at-vinnies>
- Holsworthy High first to return and earn, Liverpool Champion, September 2018, <https://www.liverpoolchampion.com.au/story/5651227/holsworthy-high-first-to-return-earn/>

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