

Life Cycle

Teacher Notes

Secondary (7-10)

ACTIVITY DESCRIPTION

The Life Cycle activity explores the life of a product from resource extraction, manufacturing, production and consumption through to 'end of life'. Students are asked to order cards to piece together the entire life cycle of a product (computer, paper, plastic and green bags). The activity highlights the resources that go into these items, and the concept that there is no such thing as 'away' when we dispose of them.

INSTRUCTIONS

1. Tune in

What resources and energy go into the production and manufacturing of the product you're looking at (computer, paper, plastic bag, etc.)?

2. Assemble

Each card represents a phase in the production of the product. Put together its Life Cycle in chronological order.

2. Discussion

1. Following the whole life cycle of a product, what do you think are some of the impacts upon the environment along the way?
2. How could you redesign a product so that there is less harm involved in its production and disposal?
3. What choices can you make in your day to day life to reduce waste to landfill?

SUGGESTIONS FOR ASSESSMENT

Formative

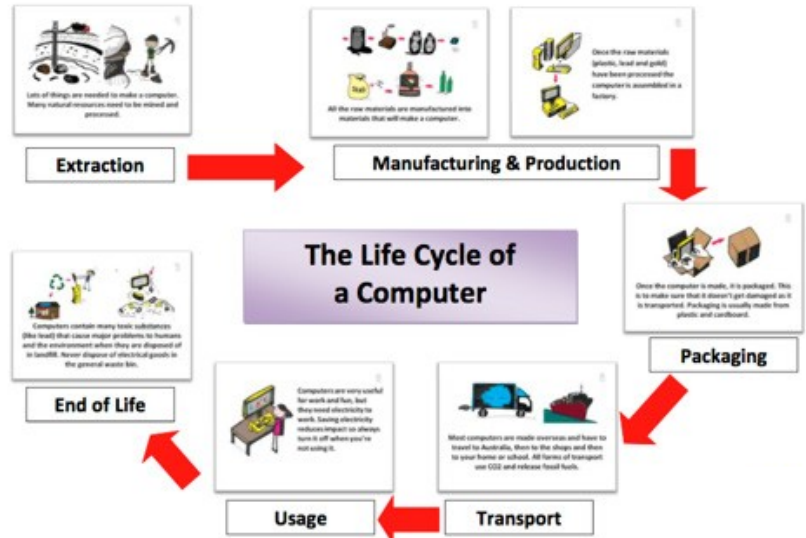
1. Participation in the Life Cycle activity
2. Participation in the Discussion questions above

BACKGROUND NOTES

The product life cycle is an important context to understand the environmental impact of a product over time. This life cycle encompasses the products inception from resource extraction, manufacture and packaging, through to use and disposal. A lot of our current product life cycles are linear whereby products are 'designed for the dump'; resources and energy are required to manufacture items that are designed to be used for a short period of time or even 'one-time-use' before ending up in landfill. A circular economy, on the other hand, is where a product is designed to be durable over its lifetime and reused or recycled at the end of life.

ACTIVITY SOLUTIONS

Life Cycle of a Computer



Life Cycle of Plastic and Green Bags



Life Cycle of Paper



ACCESS THIS ACTIVITY

Visit the CERES School of Nature and Climate website to download the activity - <https://sustainability.ceres.org.au/education-resources/curriculum-activities/>

Curriculum and RSS Links

KEY CONCEPTS

Recycling, E-waste, Plastics, Close Loop, Lifecycle, 5Rs (Refuse, Rethink, Reduce, Reuse, Recycle)

KEY LEARNING INTENTIONS

1. Introduce concept of a product's life cycle
2. Consider the impact on our environment of different materials upon extraction
3. Consider the impact on our environment of different materials at 'end of life'
4. Compare closed loop (cradle-to-cradle/regenerative) design vs. linear resource consumption patterns

VICTORIAN CURRICULUM

Design & Technologies

7 - 8

Examine and prioritise competing factors including social, ethical, economic and sustainability considerations in the development of technologies and designed solutions to meet community needs for preferred futures ([VCDSTS043](#))

9 - 10

Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involved ([VCDSTS054](#))

Science

7 - 8

Some of Earth's resources are renewable, but others are non-renewable ([VCSSU100](#))

Geography

9 - 10

Effects of the production and consumption of goods on places and environments throughout the world and including a country from North-East Asia ([VCGGK142](#))

SUGGESTED RESOURCESMART SCHOOLS MODULE LINKS



Undertaking the activity as described above links to the *ResourceSmart Schools Waste Module - actions B1.2, B1.3*

Below is a list of extension activities that link to additional actions of the Waste module:

1. Students research and implement waste collection services at school for clothing, e-waste and/or mobile phones. Investigate partner organisations that can help your school such as TerraCycle, Melbourne Zoo and Southern Cross Recycling (*ResourceSmart Schools Waste Module - actions A6.3, A6.4, B1.4, C2.1, C2.2, C3.1*)
2. Students undertake a bin audit for the school. Students report back to the whole school on contamination and opportunities for reducing waste going to landfill (*ResourceSmart Schools Waste Module - actions A1.1 C2.1, C2.2*)
3. Students run a Design Challenge where commonly discarded waste items are repurposed or redesigned in a creative and/or functional way that supports sustainability (*ResourceSmart Schools Waste Module - action B1.3*)
4. Students run a Nude Food lunch day at school to raise awareness around packaging and waste. Follow up with whole school community survey to investigate opportunities to hold these as an ongoing action (*ResourceSmart Schools Waste Module - actions A3.1, A3.2, B1.4, C1.2, C1.4, C2.1*)
5. Invite local indigenous group/s to share their perspective on waste from an environmental and historical point of view (*ResourceSmart Schools Waste Module - actions B1.5, B1.6*)
6. Students write a learning story about key findings of the activity and share in your school's newsletter and website, including whole of life cycle considerations when choosing to buy a product (*ResourceSmart Schools Waste Module - actions C1.1, C1.3, C1.5*)

Speak to your CERES ResourceSmart Schools Facilitator about further links to the Waste Module.