

Unit of Inquiry: Litter and Single-Use Plastics – Teachers’ Guide



Overview

This unit of inquiry is presented across three topics, each contributing to an accompanying PowerPoint presentation for students to complete over the course of the unit. The presentation can be used as an information gathering tool or as part of a formative or summative assessment, and uploaded to the platform you are using with your class (e.g. Google Classroom, Teams, OneDrive, DayMap, Sentral etc.). It allows students to work from the classroom or remotely. Students also complete their own unit workbook that may also be used as either an information gathering tool or an assessment task.

The unit is highly collaborative, with students working in **teams** to complete their presentation.

Each student also completes their own workbook with a combination of whole-class discussion, small group work, working in pairs and as individuals.

In this document, you will find guidance for each stage of the unit, links to supporting resources, and a table of curriculum connections for Science, Design and Technology, and Humanities and Social Sciences curricula for years 4-6.

This unit is organized along 5E principles – Engage, Explore, Explain, Elaborate, Evaluate.

Topic 1: Litter

Aim:

To explore litter as an environmental, social, and economic issue. To encourage students to make a personal connection to litter as an issue and introduce the need for behaviour change.

Key Skills:

Collaboration
Literacy
Research
Online literacy – source evaluation

Locations:

Classroom
Library/IT
Outdoors - school grounds

Engage

To activate students' prior knowledge about litter, the topic begins with a litter brainstorm, either in small groups or as a whole class. Students use this brainstorm to create a definition of *litter* for their workbook, and the student teams collaborate on an agreed definition to add to their presentation.

Explore

Students make predictions in their workbooks about the locations around the school that litter is most likely to be found, and the types of litter that are most likely to be there. Students then walk around the school in their presentation teams taking photographs of the litter they find. A selection of these images can be added to the PowerPoint presentation. Students then review the predictions made in their workbooks.

Explore – Explain

The final activity for topic 1 investigates the impact of litter, finding information about litter's effects on the economy, the environment and/or society. Students choose, or are assigned, one of the three impact areas to research and must find information about three impacts of litter, sourcing their information from multiple sites.

Once this is done, the student teams can decide among themselves which of the impacts to add to their PowerPoint presentation.

The following videos and articles may be useful:

[HTTPS://WWW.FORGERCYCLING.CO.UK/BLOG/HOW-LITTER-HARMS-OUR-WILDLIFE/](https://www.forgercycling.co.uk/blog/how-litter-harms-our-wildlife/)

Reading level: medium; Video: 2:48; Images

[HTTPS://WWW.BoomerangAlliance.org.au/mpp-blog-05-litter-what-where-how](https://www.boomerangalliance.org.au/mpp-blog-05-litter-what-where-how)

Reading level: high; Video: 9:29; Images

[HTTPS://SCIENCING.COM/EFFECTS-LITTERING-ENVIRONMENT-ANIMALS-8634413.HTML](https://sciencing.com/effects-littering-environment-animals-8634413.html)

Reading level: medium; Images

For more resources and information about the impacts of litter, visit the **Litter Less** unit of work at [HTTP://WWW.KESAB.ASN.AU/LITTERLESS/UNIT-OF-WORK/](http://www.kesab.asn.au/litterless/unit-of-work/)

Lesson 2 of the **Litter Less** resource has several activity and information sheets that could support the learning in this unit:

'Litter in the real world'

'Litter scenario impacts and hazards chart'

'Impacts of littering'.

Topic 2: Single-Use Plastics (SUPs), Legislation and Alternatives

Aim:

To apply the definition of SUPs to identify everyday products and packaging. To explore the problems caused by SUP's, and issues related to the reduction of SUPs – legislation, behaviour change, and alternatives.

Key Skills:

Collaboration

Literacy – comprehension

Literacy – vocabulary

Literacy – persuasion

Locations:

Classroom

Library/IT

Engage – Explore

To begin, students are given a definition of Single-Use Plastics and work in their teams to brainstorm familiar examples of SUPs. Once the team's list is compiled and added to their PowerPoint, students individually record on page 3 of their workbook which of these they (or their family) use regularly.

Students then read through facts and undertake some math-based activities to explore why SUPs are a problem. Individually or in their teams students will also find examples of things that weigh one tonne to help visualize the amount of plastic going into our oceans. Each team will then select some of their examples for inclusion in their PowerPoint.

Explain – Elaborate

Sale and distribution of SUPs is legislated in South Australia. Building an understanding of this is the next focus of the unit. Students will require a copy of the information sheet for this unit (found with the other resources on the WOW website) and access to the Replace the Waste website:

WWW.REPLACETHEWASTE.SA.GOV.AU/

Firstly, students will consider what it means to legislate something, then read the facts on the sheet and the website. On first reading, students will encounter vocabulary that may be unfamiliar and there is an activity to build their understanding of some key terms. Following this, students read the information again and record 3 – 5 key ideas.

Evaluate

Students work in their teams to add to the PowerPoint their initial understanding of the word legislation, and then agree on a list of the 3 – 5 most important elements of what they now understand about the SUP legislation.

Elaborate

Once students have considered the SUP legislation, they investigate alternative products and consider how these can replace the single-use items that they use regularly. They will return to the information recorded earlier in the unit (page 3 of their workbook) and indicate which alternative products they would prefer to use, and then as a team decide on which alternatives to add to their PowerPoint presentation.

To assess learning about SUPs, students will create a short quiz for a classmate to complete and then undertake a 10-question quiz provided with this unit. The questions for the class quiz can be found with the other resources on the Wipe Out Waste website. The quiz can be printed and completed, or you can enter the questions and answers in an online format such as Kahoot or Quizlet.

To complete topic 2, students will create a persuasive text (in a negotiated format) that aims to convince others to use alternatives for common SUPs.

Potential extension activities to complement inquiry topic 2:

- Write a report on the various types of plastic.
- Create SUP awareness posters to display around your school. Use messages and images that will educate others about the negative aspects of using SUPs.
- Give a presentation to children in another class about what SUPs are and what we can do to reduce, avoid and reuse them.
- Bring into school an example of a SUP item and another item that can be used as an alternative that is better for the environment. Share with the class.
- Investigate the packaging used by your school canteen. Could changes be made?
- Write to your local Member of Parliament to find out what SUP initiatives are occurring in your area.

Topic 3: Reduce, reuse, recycle, compost

Aim:

To understand how we can reduce our waste through building better lunchboxes. To understand waste and resource separation for sustainable circular use.

Key Skills:

Collaboration

Literacy – audio-visual

Design – graphical representation

Locations:

Classroom

Library/IT

Art room

Engage

The topic begins with individual students considering the amount of waste materials they bring to school through a simple audit and classification of packaging in their own lunch box, then working as a class to see the total for each category (reusable, recyclable, compostable, to landfill). Each team then works together to combine their individual results into their PowerPoint presentation and add photos of their lunchboxes.

Explore - Elaborate

Following this, students work in pairs to create several options for ‘nude’ (package-free) lunchboxes and record their ideas for three lunches in their workbooks. Each team adds a selection of these ideas into their PowerPoint presentation.

For resources to support this activity, look for ‘Nude Food’ in the ‘Resources’ section of WWW.WOW.SA.GOV.AU

Next, students build their understanding of which items belong in each bin. First, they watch a video explaining the landfill problem facing Australia, then test their knowledge of where lunchbox and classroom items go with a matching activity (answers on page 6).

WWW.ABC.NET.AU/BTN/CLASSROOM/RECYCLING/10532554

Video: 4:08

For more activities, information and resources about correct bin placement, visit the ‘Resources’ section of WWW.WOW.SA.GOV.AU and look for ‘Bin Materials Audit,’ ‘Bin Systems Assessment’ and ‘Less to Landfill.’

The ‘Which Bin’ website is also useful (WWW.WHICHBIN.SA.GOV.AU/), and your local council will also have information specific to your area.

Putting learning into action

Topic 3 concludes with students working in their teams to design and create bin posters that explain what can go into each bin at school. These could be placed near your classroom bins and shared with other classes.

To encourage students to put their learning into action and generate behaviour change, consider registering your class (or year level, or school) for the Less to Landfill Challenge.

[LESS TO LANDFILL CHALLENGE \(WWW.SA.GOV.AU\)](http://WWW.WOW.SA.GOV.AU)

Topic 3 Bin Sort answers:

| • Landfill | • Compostable | • Recyclable |
|---|---|---|
| <ul style="list-style-type: none"> • Chip packets • Plastic wrap • <u>Zip-lock bags</u> • Fruit Roll-Up wrapper | <ul style="list-style-type: none"> • Left-over sandwich crust • Bamboo cutlery • Banana peel • Paper straw • <u>Half of a pencil</u> | <ul style="list-style-type: none"> • <u>Empty lemonade bottle</u> • Aluminium foil • <u>Juice box</u> • <u>Paper used on one side</u> |

The juice box and the lemonade bottle could both go to a 10c deposit collection.

The Zip-lock bags could be cleaned and reused.

The half of a pencil could be sharpened and used.

The paper used on only one side could be collected in a scrap-paper tray in class and used before disposing to recycling.

Support resources

The following resources can be used to support, complement, or extend this unit:

Replace the Waste WWW.REPLACETHEWASTE.SA.GOV.AU/

Litter Less WWW.KESAB.ASN.AU/LITTERLESS/

Which bin WWW.WHICHBIN.SA.GOV.AU/

Stuff at home – put it in the right bin WWW.KESAB.ASN.AU/STUFF/

Food scraps to compost WWW.KESAB.ASN.AU/FSC/

KESAB Excursion [HTTP://WWW.KESAB.ASN.AU/SCHOOLS/EDUCATION-CENTRE/](http://WWW.KESAB.ASN.AU/SCHOOLS/EDUCATION-CENTRE/)

KESAB Incursions [HTTP://WWW.KESAB.ASN.AU/SCHOOLS/CLASSROOM-SESSIONS/](http://WWW.KESAB.ASN.AU/SCHOOLS/CLASSROOM-SESSIONS/)

Mini-Bin Game [HTTP://WWW.KESAB.ASN.AU/PRODUCT-SALES/KITS-GAMES/MINI-BIN-GAME/](http://WWW.KESAB.ASN.AU/PRODUCT-SALES/KITS-GAMES/MINI-BIN-GAME/)

Let's be waste warriors! reduce, reuse, recycle [HTTP://WWW.KESAB.ASN.AU/SCHOOLS/RESOURCES/LETS-BE-WASTE-WARRIORS/](http://WWW.KESAB.ASN.AU/SCHOOLS/RESOURCES/LETS-BE-WASTE-WARRIORS/)

Curriculum Links

| Learning Area | Year 4 | Year 5 | Year 6 |
|--------------------------------|---|---|--|
| Science | <p>Natural and processed materials have a range of physical properties that can influence their use (ACSSU074)</p> <p>Science knowledge helps people to understand the effect of their actions (ACSHE062)</p> | <p>Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083)</p> | <p>Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE100)</p> |
| Design and Technologies | <p>Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (ACTDEK013)</p> <p>Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs (ACTDEK010)</p> | <p>Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use (ACTDEK019)</p> | |
| HaSS | <p>The use and management of natural resources and waste, and the different views on how to do this sustainably (ACHASSK090)</p> <p>The differences between ‘rules’ and ‘laws’, why laws are important and how they affect the lives of people, including experiences of Aboriginal and Torres Strait Islander Peoples (ACHASSK092)</p> <p>Reflect on learning to propose actions in response to an issue or challenge and consider possible effects of proposed actions (ACHASSI081)</p> | <p>Influences on consumer choices and methods that can be used to help make informed personal consumer and financial choices (ACHASSK121)</p> <p>Reflect on learning to propose personal and/or collective action in response to an issue or challenge, and predict the probable effects (ACHASSI104)</p> | <p>Reflect on learning to propose personal and/or collective action in response to an issue or challenge, and predict the probable effects (ACHASSI132)</p> <p>Present ideas, findings, viewpoints and conclusions in a range of texts and modes that incorporate source materials, digital and non-digital representations and discipline-specific terms and conventions (ACHASSI133)</p> |