

Sustainable Change Makers: Lunchbox Citizens



**Online
Resource**
for Teachers



Australian Government
Department of Agriculture,
Water and the Environment



Old
Parliament
House

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Supporting Material

(these additional resources are separate PDF documents which can be found on the MoAD Learning Website under Resources)

- Student Inquiry Booklet
- Student STEAMD Booklet
- Unpacking the Lunchbox: Resource List
- Unpacking the Lunchbox: Booklist
- Hexagon Thinking activity sheet
- Scavenger Hunt on Waste activity sheet
- Bento Box Design planning template
- Bento Box independent lesson plan

Foreword



Source: Department of Agriculture, Water and the Environment

Plastic has been a revolutionary material. It allows us to mass-produce lightweight products and to cheaply package the things we buy. Plastic makes our lives convenient. But plastic litter is one of the most insidious forms of pollution.

Stroll along many beaches in Australia — or around the world — and this becomes apparent. Around 80 per cent of the world’s marine litter is plastic. It is estimated that by 2050, there will be more plastic in the ocean than fish by weight. So now is the time to act on plastics. We need to identify and stop using the plastics that we can’t manage effectively.

In March this year, I had the privilege of meeting a group of inspiring young Australians who have chosen to move away from single use and problematic plastics. These students attended the Australian Government’s first National Plastics Summit in Canberra and are the inspiration for this wonderful resource, now available for all Australian teachers and children, *Sustainable Change Makers: Lunchbox Citizens*.

In collaboration with the Museum of Australian Democracy this resource is now available for teachers and students of all year levels to explore Australia’s growing waste problem, the impact single use and problematic plastics are having, and the solutions that the youth of Australia can take to remedy the impact for the future of environment.

I’d like to encourage all teachers across Australia to use *Sustainable Change Makers: Lunchbox Citizens* with their students.



The Hon Sussan Ley MP
Minister for the Environment

Message from MoAD's Director

THE SUSTAINABLE CHANGE MAKERS: LUNCHBOX CITIZENS LEARNING RESOURCE IS A PARTNERSHIP BETWEEN MOAD (THE MUSEUM OF AUSTRALIAN DEMOCRACY) AND THE DEPARTMENT OF AGRICULTURE, WATER AND THE ENVIRONMENT (DAWE)

On 2 March 2020 a group of inspiring young students came together at MoAD for the National Plastics Students Summit, as part of the National Plastics Summit held on the same day at Australian Parliament House.



Source: Department of Agriculture, Water and the Environment

The Student Summit brought together 20 Year 5 and 6 students from across Australia to take action on problematic and single-use plastic waste. Throughout the highly successful day students met the Prime Minister and Minister for the Environment, Sussan Ley; participated in panel discussions with leading experts on plastic waste to expand their knowledge base; and explored possible solutions with the Governor-General, David Hurley, and Mrs Hurley.

Students also worked on a creative response task addressing the use of problematic and single-use plastics in lunchboxes, and individually wrote their own call to action statements that were presented to Minister Ley.

MoAD has been delighted to work with these young leaders and the Australian Government to develop *Lunchbox Citizens* — a resource aligned with the Australian Curriculum that supports teachers with classroom learnings on active citizenship and demonstrates how students can be involved in addressing social and environmental challenges into the future.

Daryl Karp AM
Director of MoAD

Introduction

ENGAGING WITH, AND UNDERSTANDING, THE SIGNIFICANCE OF SUSTAINABILITY IS A CRITICAL ISSUE RELEVANT TO ALL STUDENTS AS WE MOVE INTO THE FUTURE.

***Sustainable Change Makers* supports student voice and agency in the development and implementation of an action-based response to this issue. It will enable students to gain an awareness of the impact humans have on the environment, and subsequently, take decisive action to become change-makers in how they care for the environment.**

Through *Sustainable Change Makers: Lunchbox Citizens* students will explore the growing waste problem occurring not only in Australia but globally. During the school day, students generally participate in recess and lunch activities. Drawing on their knowledge of the lunchbox, this resource uses this common item and its contents to start a serious conversation about the impacts of rubbish on our planet, in particular the excessive amount of problematic and single-use plastics thrown away every day.

This holistic resource has foundations in Civics and Citizenship and the cross-curriculum priority Sustainability. It is grounded in Inquiry and STEAMD (Science, Technology, Engineering, Arts, Mathematics and Democracy) approaches therefore incorporating Key Learning Areas from across the curriculum to support its underpinnings in a real-world context. The resource is easily adaptable to a broad range of age groups. It supports the localised needs of different communities, and meets students where they are at in their own sustainability journey.



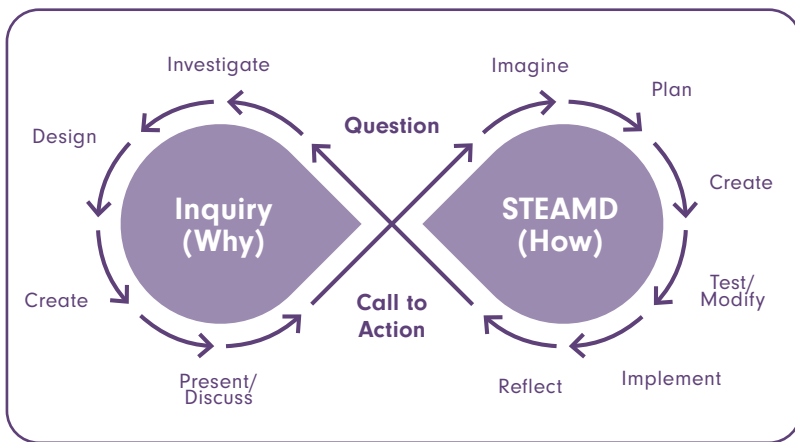
Source: Museum of Australian Democracy

Action-based Approach

AT ITS CORE, *SUSTAINABLE CHANGE MAKERS* INTENDS TO HELP TEACHERS EMPOWER STUDENTS TO BECOME INFORMED, ACTIVE CITIZENS.

This resource incorporates a unique dual approach to Inquiry and STEAMD, see diagram below. Students utilise the Inquiry approach to research, critically evaluate and build a solid foundation in their understanding about the extent of the waste problem. They will also investigate current recycling practices, the issues surrounding problematic and single-use plastics, and what strategies will help reduce the waste problem.

Drawing on this knowledge, students then engage with the STEAMD cycle, developing a possible cause of action grounded in a strong base of information and understanding. The Inquiry cycle will have prepared them to tackle a localised issue within the school or local community, or possibly extend beyond this.



■ Source: Museum of Australian Democracy

INQUIRY

establishing the **why** (informed reasoning) behind the necessity to act now and make changes to help care for our environment.

STEAMD

scaffolding students through the **how** (active citizenship) to develop a call to action and positively affect change.

TEACHER NOTES

Objectives of the Resource

- Provide teachers with an easy to use resource for investigating sustainability
- Support teachers and students to feel empowered to make positive changes to care for the environment
- Provide a platform that enhances student voice and agency in the classroom
- Engage teachers and students in Inquiry and STEAMD processes through hands-on, relevant student-driven activities
- Create meaningful driving questions to stimulate Inquiry and critically evaluate current practices in caring for the environment
- Support existing and emerging pedagogies

TEACHER NOTES

The Lunchbox Citizens Challenge

DRAWING ON STUDENTS' COMMON UNDERSTANDINGS OF THE SIMPLE LUNCHBOX, EXPLORE HOW EVERYDAY HABITS ARE CONTRIBUTING TO THE GLOBAL WASTE ISSUE.

Consider the reasoning behind systemic, deeply engrained waste orientated practices, and critically evaluate a range of sustainable, long term situations.

Lasting change can be as simple as students identifying:

- the need to use less problematic and single-use plastics in their lunchbox
- implementing a whole school wrapper free lunch
- beginning a composting program
- creating an alternative use for waste materials, or
- campaigning to the local council.

Inquiry Process

Planning for Inquiry

There are some critical decisions teachers need to make before students can begin the Inquiry process.

- Will it be a guided Inquiry (with teachers formulating the driving question), or an open Inquiry whereby students create their own questions?
- Will students undertake this Inquiry as a whole class or work in small groups? We recommend groups of three for active engagement.
- Consider how best you can support students with creating change as this is a significant component of the Inquiry / STEAMD process.



Inspiring Change

BEFORE UNDERTAKING THEIR INQUIRY PROCESS, STUDENTS NEED TO BE 'HOOKED' AND INSPIRED, SO IN THE SENSE THAT THEY ARE MOTIVATED TO WANT TO KNOW MORE.

It is essential to find connections which are relevant to students and resonate if they are to develop a change-maker mindset, which will consequently have the most significant impact long term. In this case, it's all about the growing waste problem, how it affects them directly and finding a connection which instils a desire to make a change.

In our *Unpacking the Lunchbox: Resource List*, we have listed a range of 'hook' options for your students to get them thinking about how they could better care for the environment and help reduce the waste problem.

Below are some of the ways to approach this by focusing on;

- key individual young people who have achieved change or drawn attention to specific waste or environmental causes;
- looking into schools or local community groups who are already making change;
- the current global/national situation and the reality of how extensive the problem is; or
- the immediate classroom or playground environment.

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Inspiring Change (continued)

Below are some follow on activity suggestions to help students make the connection between the 'hook' and their immediate environment.

Activity 1

WHAT'S IN A LUNCHBOX?

This activity encourages students to look inward and reflect on what is packed in their daily lunchbox. It's an opportunity to acknowledge that small changes in everyday practices can have a big difference.

- Throughout a school day, students collect their rubbish for later analysis. It's also essential to record items which did not create any waste, including fruit or vegetables.
- The rubbish is organised into groups based on materials, including the fresh, unpackaged items students ate. From here, the data can be graphed and analysed.

Activity 2

TAKING THE WASTE DIVE A STEP FURTHER

Scavenger Hunt on Waste activity sheet

- Students explore the school environment gathering data on the rubbish found around the playground and categorising the findings.
- Based on their findings students discuss possible reasons for the rubbish.

Inside the classroom

- Students (and the teacher) record the types of rubbish they create as a class through general practices, craft activities and learning experiences. This activity can be conducted over a single day or the course of a week.

On the home front

- Students are given a table to record rubbish created over a day or week in their household. The data can be organised into groups such as food scraps, paper and cardboard, problematic and single-use plastics and other. Another step would be to provide another option for students to identify what happened to the waste, did it go to landfill, or was it recycled/reused?

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Driving Question

THE DRIVING QUESTION IS AN OVERARCHING QUESTION/S WHICH STUDENTS WILL BE ABLE TO ANSWER AT THE END OF THEIR INQUIRY PROCESS.



This driving question can be developed in conjunction with students (guided Inquiry), or if students are already familiar with the Inquiry process (open Inquiry), then they can come up with their own.

The driving question itself needs to have depth, and not be something that can be readily answerable before the Inquiry has even started. It also needs to be open-ended, to support rigorous research and result in a meaningful response. The supporting questions are there to help guide students and keep their research focused on answering the driving question. Ideally, the question will emerge from students' sparked interest and understanding which develop out of exploring the 'hook'.

TEACHER NOTES

Examples of driving questions may include:

- How can we reduce waste to make a positive difference in supporting the environment?
- What happens to our lunchbox rubbish once we put it in the bin?
- How are animals affected by rubbish and problematic and single-use plastics?
- What everyday practices can we put in place to better care for the environment?
- Why are problematic and single-use plastics an increasing problem for the environment?
- What social changes need to occur for humans to better care for the environment?
- What is the relationship between environments and my roles as a consumer and citizen?
(Curriculum Year 5 specific)

Investigate

THE INVESTIGATION PART OF THE INQUIRY PROCESS IS ABOUT IDENTIFYING GAPS IN STUDENTS' KNOWLEDGE BASE AND WILL TAKE UP THE MOST TIME.

At this point, students are gathering relevant information to build a solid foundation for developing an understanding and opinion on how, from their perspective and circumstances, they can implement positive change.



Once the driving and guiding questions have been identified, teachers can decide whether any explicit teaching needs to occur for some (or all) students before they start researching for themselves. To support students, the whole class may need to be explicitly taught how to research effectively. This can be done by working through the first couple of topics together, before gradually releasing more ownership to the students.

Throughout this stage of the Inquiry, teachers should encourage students to refer back to their questions continually and to reflect on whether they are focusing their research on answering the driving question. Throughout this process, students should also keep a record of all the sources they have used. This will be beneficial down the track, when they may wish to use them again in their presentation. Keeping a record of the searches they have made, and hence sources they have drawn on for information, will render this process much quicker and more efficient.

BELOW IS A SUGGESTED LIST OF TOPICS STUDENTS MAY REQUIRE ADDITIONAL INFORMATION ON TO ADEQUATELY ANSWER THEIR DRIVING QUESTION.

UNPACKING THE LUNCHBOX: RESOURCE LIST

***Unpacking the Lunchbox: Resource List* has a range of sources which will provide a starting point for students' exploration.**

These topics can be worked through in several ways, for example as a whole class, or with students in groups of three, all researching the same content and coming back together at the end of the lesson to share what they have discovered. In the case students are familiar with the Inquiry process, they can research a separate topic each in their groups and report back to the whole class. This style adds another level of meaning because as the students hold the knowledge, they are responsible for sharing critical information to support the class' collective understanding.

As a starting point, it's essential to gain an understanding of what students already know about the waste problem. This will inform which of the investigation topics need to be covered.

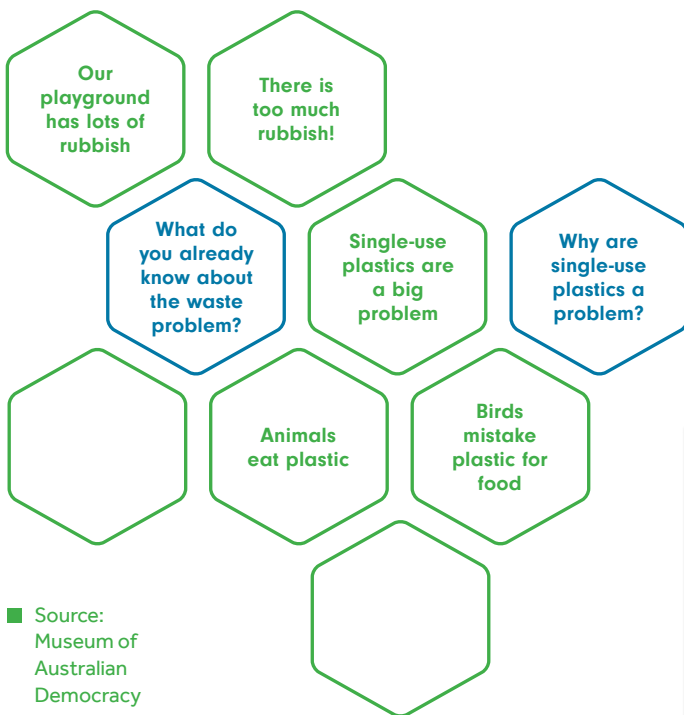
HEXAGON THINKING

The hexagon is a tessellating shape which allows for multiple connections to occur around a single form.

This feature is utilised to springboard a question or statement, which can then be expanded upon in specific detail, see example below. Through this activity, students will have the opportunity to be active participants in the Inquiry process by sharing the knowledge they already have on the topic of waste, but also ask questions. See additional resources for an activity sheet with hexagon templates and colour coding.

Suggested questions to start the Hexagon Thinking process

- What do we already know?
- What information do we need to research?
- What information is essential to help us?
- What would you like to discover?



BELOW IS A LIST OF POSSIBLE TOPICS FRAMED AS QUESTIONS WHICH STUDENTS COULD INVESTIGATE TO EXPAND THEIR KNOWLEDGE AND HELP THEM ANSWER THEIR INQUIRY QUESTION.

For specific resources to support each theme, refer to *Unpacking the Lunchbox: Resource List*.

- What is the problem with problematic and single-use plastics?
- What is the purpose of food packaging?
- What happens to rubbish out in the environment?
 - » Breaking down materials
 - » Effects on animals
 - » Effects on waterways
- Where does our rubbish go after we put it in the bin?
- How is recycling sorted and processed?
- How are problematic and single-use plastics identified?
- How do you identify which items can be recycled?
- What can be done with plastics to reuse them?

TEACHER NOTES

Design

THE DESIGN STAGE PROVIDES STUDENTS WITH AN OPPORTUNITY TO ANALYSE THEIR RESEARCH AND IDENTIFY KEY PIECES OF INFORMATION THEY WANT TO SHARE WITH OTHER STUDENTS.



This needs to be undertaken while critically assessing whether the information they have gathered answers the driving question.

The critical thinking process will help them determine the essential content which best answers the driving question, and disregard any irrelevant information. With this Inquiry, the design stage is about students identifying key facts and information which resonated with them about the waste problem. As well as coming back to the driving question and considering the changes they can make to support positive change.

The design stage is also the point at which students brainstorm ways to communicate their findings effectively. Presentations can take many forms, including creating an artwork, developing an infographic or using digital technologies. Students need to consider who the audience is and what they will find engaging and relevant.



Source: Department of Agriculture, Water and the Environment

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BENTO BOX DESIGN

Referring back to the simple lunchbox concept; our resource list includes a template to support students in designing a creative response in the form of a Bento Box.

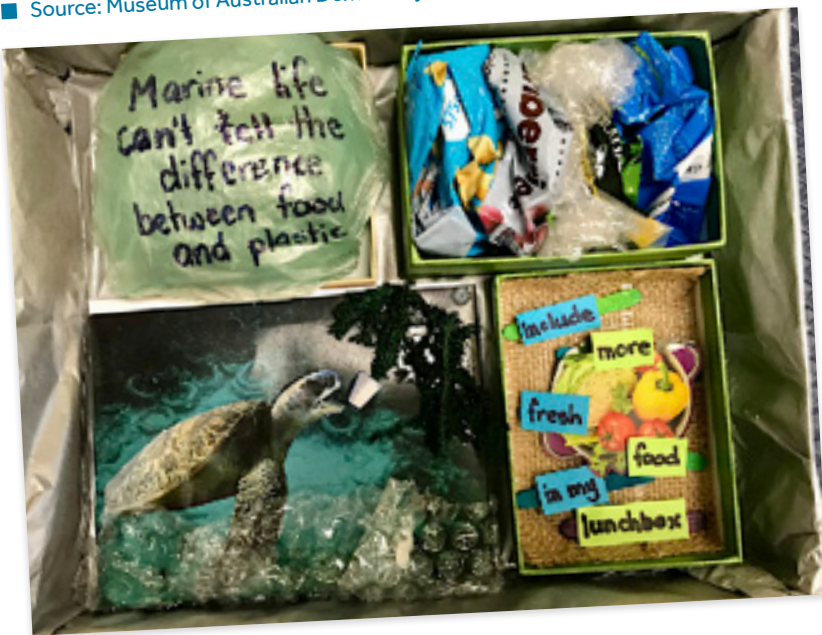
The Bento Box reflects a modern lunchbox – compartmentalised food for recess and lunch, generally without packaging. Each compartment represents a different focus, which contributes to a complete statement on students understanding of the waste problem.

THE MOST SIGNIFICANT PART OF THIS PROCESS IS STUDENTS IDENTIFYING A DEFINITE CALL TO ACTION STATEMENT, WHICH CAN BE PROGRESSED INTO THE STEAMD CYCLE.

Year 5/6 students created the Bento Box examples shown below as part of the 2020 National Plastics Student Summit.

Twenty students representing each state and territory gathered in Canberra to participate in a conversation about the growing waste problem. These Year 5/6 students engaged with experts and discussed how young people could help care for the environment by reducing problematic and single-use plastics usage. Adhering to the vision of the Bento Boxes, students were given a design brief; this template can be found in the supporting documents.

■ Source: Museum of Australian Democracy



INDIVIDUAL BOX COMPARTMENTS:

- **Identify:**
What is the problem?
- **Clarify:**
Key fact or statement. What needs to be said to the audience to impact change?
- **Visualise:**
A strong emotive visual image.
How can the audience see the problem?
- **Call to Action Statement.**
What positive change is going to be made?

This activity could also be completed in a digital format as a simple visual as described above, or multimodal text.

TEACHER NOTES



Create

During this stage, students take the time to create a detailed, high-quality response to share with their audience.

They need to consider the materials they will use, the time it will take to make and its overall readability. Students could also have discussions about how the presentation will run; this should include considering who will be responsible for presenting particular pieces of information and whether speeches need to be written out to ensure a more polished performance.

ONCE AGAIN, THIS IS AN OPPORTUNITY FOR STUDENTS TO REFLECT ON WHETHER WHAT THEY HAVE CREATED ANSWERS THE DRIVING QUESTION, AND WHETHER IT IS CLEAR, CONCISE AND ENGAGING.

The Bento Box will become a critical visual support when students are explaining their reasoning to others. It will also form the basis for their transition into the STEAMD process, as the Call to Action statement will directly inform the positive action they take to reduce the waste problem.

Present/ Discuss

This stage is all about students sharing their learning, unpacking their creative responses and the significance behind their choices. While they are listening to the presentations, students should make a record of any comments and questions, to fuel further discussion around the theme.

This is also an opportunity for students to evaluate each of the Call to Action statements and decide which one or more, they will transition into the STEAMD process.

Presenting can also include students sharing their learning beyond the classroom. Students may be interested in connecting with key stakeholders, including other students within the school, parents or community members.

Share your students responses with us! Do so at:

Twitter @moadlearning

Hashtag #LunchboxCitizens

TEACHER NOTES

Call to Action

STUDENTS WILL HAVE BEEN ACTIVELY REFLECTING THROUGHOUT EACH STAGE OF THE INQUIRY PROCESS. THIS STAGE ALLOWS STUDENTS TO PULL REFLECT ON THEIR LEARNING AND TAKE A MOMENT TO REFLECT ON WHAT THEY GOT OUT OF THE EXPERIENCE.

During this reflective time, students can identify one or possibly multiple Call to Action statements which can be workshopped and progressed into the STEAMD process.

Question for students to consider before moving into the STEAMD process.

- What are we going to change to help support care for the environment?
- What is achievable?
- How can we support change in our school or the local community?
- How can we encourage others to make a difference?

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STEAMD Process

THE *SUSTAINABLE CHANGE MAKERS: LUNCHBOX CITIZENS* STEAMD (SCIENCE, TECHNOLOGY, ENGINEERING, ARTS, MATHEMATICS AND DEMOCRACY) PROCESS IS DESIGNED TO TAKE STUDENTS IN-DEPTH INQUIRY LEARNING, AND TRANSITION THEIR CALL TO ACTION INTO A PRACTICAL SOLUTION THEY CAN EFFECTIVELY IMPLEMENT.



Keeping this in mind, students need to have realistic ideas which are possible to trial or introduce into the classroom, school, or local community. This process is all about identifying what the students see as important and allowing them to lead change.

THIS COMPONENT OF THE RESOURCE OUTLINES THE KEY MILESTONES IN THE STEAMD PROCESS AND IDENTIFIES WHAT STUDENTS NEED TO DO AT EACH STAGE.

As a guide, this section provides a list of possible options is below which may help direct students Call to Action statements into a practical outcome.

To support students through this process, a STEAMD Booklet has been included as an additional resource.

Throughout this process, students can work in small groups all researching the same Call to Action statement, or they can research multiple options.

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Imagine

THE IMAGINE STAGE IS ALL ABOUT BUILDING CONNECTIONS BETWEEN THE CALL TO ACTION STATEMENT AND STUDENTS DEVELOPING A PRACTICAL SOLUTION.

They will need to research their ideas, look at what is already being done, and critically analyse what is achievable in their context. Keep in mind this process is centred on students taking action to implement changes they identify.



Suggested projects:

- Create a biodegradable food container
 - Transform plastic materials or paper into reusable baskets
 - Design and make a reusable bag from fruit and vegetable storage, or general groceries
 - Create a waste monster to gobble up rubbish
 - Create a new use for problematic and single-use plastics / recyclable materials within the classroom or school community
 - » Pencil holders
 - » Resources for classroom role-play activities – home corner, supermarket etc.
 - » Bird / butterfly feeders
 - » Bee hotel
 - » Planter pots
 - » Craft resources – textured stamps or paintbrushes
 - » Plastic bottle watering can
 - Design a bin with engaging information on single-use plastic recycling for each class in the school
 - Upcycle craft/junk sculpture – utilising lunchbox packaging as a base to create recycled artworks for an art exhibition or to be located around the playground
- Design and play musical instruments made out of recyclable materials to accompany a song drawing attention to the waste problem
 - Design and build a Sustainability Mascot
 - create an animal or garden gnome to remind students to recycle and reduce waste.
 - Produce and film a documentary linked to recycling, problematic and single-use plastics or water pollution
 - Produce an animation showing the effects of plastic on the environment, or an animal
 - Develop a class/playground reward system for collecting and properly sorting recycled materials
 - Design effective signage to explain the different categories of recycling and what items belong in each
 - Construct a class/school mural using recycled materials
 - Use recycled materials to create a display students will be eager to photograph like giant wings

Plan

THE PLAN STAGE IS WHERE STUDENTS WORKSHOP THEIR IDEA AND DEVELOP SOLUTIONS ON HOW THEY CAN BEST TURN THIS IDEA INTO A REALITY.

As part of this process, they will need to consider resources required, the time it will take to create, and how they will communicate their intentions to others.

To effectively conceptualise their ideas, students can create detailed labelled diagrams to unpack their thinking visually. This is an opportunity to provide support by questioning their ideas which will prompt additional considerations which students may not have accounted for.

IDEAS FOR SUPPORTING QUESTIONS

Have you thought about...

- What happens to the rubbish once it has been collected at school?
- How will the product go in environmental conditions?
- Where will the product go? (bee hotel or bird feeder)

Create

The create stage of the STEAMD process needs to be allocated a sufficient amount of quality time. This stage should not be rushed.

Students have worked through the whole Inquiry process, workshoped their Call to Action statements and are now ready to bring their practical solutions to life.

At this point, students need to pay close attention to the details to produce a good quality product.

It is all about creating a sustainable product which will have longevity and appeal to a greater audience.

THIS PROCESS IS AS MUCH ABOUT HOW STUDENTS WILL ENGAGE OTHERS INTO SUPPORTING THEIR CAUSE, AS IT IS ABOUT BUILDING A PHYSICAL PRODUCT.

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Test / Modify

THE TEST AND MODIFY STAGE IS WHERE STUDENTS PUT THEIR PRODUCT OUT THERE.

How students conduct this stage will vary depending on the product and its intention.

SOME QUESTIONS WHICH WILL SUPPORT STUDENTS THROUGH THIS STAGE ARE:

- Does the product achieve its intention?
- Are other students engaged?
- Is our messaging clear?
- Does the product hold up in the natural elements?

Through testing students will need to gather data and critically evaluate if their product is complete as is, or requires modifications.

As students modify their products they will need to problem solve options which will improve their product.

Implement

Once any modifications have been made and students are satisfied with their product, this is the official point where they launch their design.

Depending on the product, this may involve a ceremony or an official event to inform other students or community members about their initiative. This stage is a great opportunity to have students organise and run the event themselves, extending on the Inquiry process.

As part of students' role in informing others they can create short digital material, posters or artworks.

Reflect

IT IS CRITICAL ONCE THE STEAMD PROCESS IS DRAWING TO A CONCLUSION FOR STUDENTS TO TAKE A MOMENT AND REFLECT ON THEIR ACHIEVEMENTS.

Reflection is just as much about identifying the positives, as it is about reflecting on the challenges. This process should be done as a group, but also allow students to individually reflect.

It is important for each student moving forward to evaluate what they have learnt about themselves, their strengths and areas that they need to work on to better support group interactions.

TEACHER NOTES



Curriculum Links

Australian Curriculum version 8.3

Key Learning Areas Year 2-10

Humanities and Social Sciences

- Humanities and Social Sciences
 - » Inquiry and Skills
- Civics and Citizenship
 - » Civics and Citizenship Skills

English

- Language
- Literacy

Mathematics

- Number and Algebra
- Statistics and Probability

Science

- Science as a Human Endeavour
- Science Inquiry Skills

The Arts

- Visual Arts
- Media Arts

Technology

- Design and Technology
 - » Design and Technology Processes and Production Skills

Cross-curriculum Priority

- Sustainability

General Capabilities

- Literacy
- Numeracy
- Information and Communication Technology (ICT) Capacity
- Critical and Creative Thinking
- Personal and Social Capability



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