A guide to implementing waste as art and environmental art projects in schools

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How to use this guide

Developed with the support of the NSW Environmental Trust, this guide provides a valuable and practical toolkit that explores waste reduction and other environmental issues through the arts. This guide facilitates the design, implementation and evaluation of waste as art projects that focus on rigorous, learning-based approaches and broad environmental outcomes. It draws on the experience and resources from a Trust-funded project undertaken by Woollahra Municipal Council, coupled with other best practice examples. This guide includes several components which can be used together or in isolation depending on your needs. We hope this guide provides the information, resources and inspiration schools and teachers need to plan, develop and implement an engaging and rewarding waste as art project.

The components of the guide include:

* background and rationale for developing a waste as art project;
* top tips for developing and implementing waste as art projects in schools;
* a guide based on art world standards implementing and evaluating large scale arts projects, including best practice examples
* links to resources including lesson plans adapted from those produced by Woollahra Municipal Council as well as curriculum and further training links.

Background and rationale

This guide aims to outline the teaching and learning resources developed for the NSW Environmental Trust-funded Environmental School’s Sculpture Prize project delivered by Woollahra Municipal Council from 2010 – 2012. It is a practical guide to starting a waste as art project. Waste as art is a socially accessible vehicle to challenge, inform and educate both students and school communities about perceptions of waste in society. Waste as art refers to creating and displaying student and community art works made from materials that would normally be discarded as waste. A successful waste as art project can focus on educational or environmental outcomes, or both, and should be developed and implemented with these in mind. Woollahra Municipal Council’s project is a great example of using teacher support and curriculum-linked resources to achieve educational outcomes around environmental issues.

Waste as art projects provide a unique opportunity for students to:

* develop their creative art making skills;
* express their thoughts and feelings about the environment around them;
* develop enquiry based learning skills around environmental sustainability issues through addressing targeted questions;
* develop knowledge and understanding about environmental sustainability issues;
* develop critical and creative thinking skills while considering environmental issues;
* develop personal and social capability by becoming involved in displaying and discussing artworks and their environmental messages and
* cultivate environmental ethics individually and amongst peers.

Waste as art projects provide a unique opportunity for teachers to:

* engage their students in holistic, enquiry-based cross curricular art process which addresses curriculum outcomes;
* deliver on many quality teaching dimensions including intellectual quality, quality learning environment and significance, problematic knowledge, metalanguage, substantive communication, engagement, social support, student self-regulation, student direction, knowledge integration, connectedness and narrative;
* address the cross-curriculum priority of sustainability and
* address the general capability of critical and creative thinking.

Why focus on waste?

Waste is a by-product of modern living. Australia is one of the largest producers of waste in the world. Australia's growth in income and wealth has created a large increase in the disposal of goods no longer needed or wanted, with an associated increase in waste diversity, toxicity and complexity.

Almost everything we do creates waste.

Recent statistics from NSW alone include:

* the average NSW household generates about 23 kg of waste a week, consisting of about 5 kg of recyclables, 5 kg of food and garden organics and close to 13 kg of landfill waste;
* the average person in NSW generates nearly 10kg of waste a week.

Consider posing the following investigative tasks to your students to encourage them to explore the theme of sustainable and unsustainable lifestyles:

* investigate changes to the consumption, recycling and re-use of materials over time, and consider how this has impacted on waste generation. You may wish to focus on one or two items such as the different bottles used for milk and soft drinks. Describe the changes that have taken place in the manufacturing and recycling of these products. Develop a product life cycle for these containers comparing how the process may have looked 40 or 50 years ago compared with today’s modern processes;
* think critically about how we are conditioned by messages of consumption (e.g. through mass advertising) and how we may counter that by reflecting on actual needs and the impacts of over-consumption, careful consumption choices, repairing and using products for as long as reasonable etc. Design an advertising message to change thought-patterns around consumption and
* consider how much waste an average Australian person generates each year. What does the waste consist of? Who are the highest and lowest consumers in our society? Students could interview grandparents, neighbours, friends about their shopping and waste habits.

Reducing waste involves changing everyday behaviours and considering personal needs and product life cycle before consumption.

Effective waste as art projects can help to raise awareness and knowledge about waste in society and promote simple actions that can be implemented to reduce waste. Change starts with conversation, and waste as art projects stimulate conversations across schools and within the broader community.

What is a Product Lifecycle?

Everything we consume goes through a life cycle, and each stage of the life cycle has environmental impacts. By reducing the use of materials in every stage of the life cycle from materials extraction, manufacturing, distribution, usage and end-of-life management or disposal, we can help to minimise the environmental impact associated with the products we use. Linking waste education to product lifecycle provides a powerful message to students of all ages around purchasing behaviour, product use and re-use, disposal or recycling. [The Story of Stuff](https://www.youtube.com/watch?v=9GorqroigqM#t=128) is an overview of product lifecycle and links to environmental management and conservation. Teachers could select a section of the Story of Stuff to show students followed by discussion and activity, we suggest the following approach:

watch up to approximately 1:34 minutes of [The Story of Stuff](https://www.youtube.com/watch?v=9GorqroigqM#t=128). Then write labels for each of the steps described in the video. Choose a common item from the classroom such as paper and describe how it gets from the original product (trees) to the piece of paper they are writing on and

next watch from 16:45 minutes (the section on disposal). Revise your product life cycle using the steps outlined in the video that include recycling. This will encourage your students to analyse the issue and apply it to their context.

When planning waste as art projects, remember to always consider the end-of-life processes associated with artworks. How can the components of the artwork be reused, recycled, re-imagined? We encourage you to include a lifecycle approach in the planning phases of your project. This will be an important consideration in closing the loop on waste.

Materials used in waste to art projects have had their own production cycles prior to being used as a material for the art work. You could encourage students to investigate these production processes, and encourage them to select materials for their projects that can be readily dismantled or deconstructed and re-used or recycled further.

Top tips

In this section, we highlight some of the main innovations we have come across in waste as art projects and provide examples of leading practices. We have grouped our favourite tips into three main categories; supporting teachers and schools, demonstrating good environmental practice and engaging the wider community. Links to case studies, resources and further reading have also been provided where appropriate.

Supporting teachers and schools

Local [environmental education centres](http://www.environment.nsw.gov.au/sustainableschools/manage/EnviroCentres.htm) can provide a wealth of information, as can council environmental staff and your local sustainable schools network. Local waste management contractors can often provide educational resource materials and tours of their facilities.

Teachers are skilled individuals who consistently seek to improve outcomes for students via professional development. Environmental sustainability training may not have been a priority for staff however many resources are available online and in the wider community. For example, many businesses have prioritised environmental sustainability and welcome partnerships with schools to promote local community-based initiatives, environmental outcomes, and their products and services. Furthermore, local government strategies encompass place-making and waste management agendas which are likely to embrace waste as art projects. The NSW Government provides guidance, resources and expertise in environmental sustainability through the [Office of Environment and Heritage](http://www.environment.nsw.gov.au/).

Who has done this well?

In developing the Trust-funded Environmental Schools Sculpture Prize project from which this guide arose, Woollahra Municipal Council identified the importance of providing a structured environmental awareness teacher training program for secondary teachers. The aim was to help visual art teachers incorporate sustainability themes into visual arts units of work (for Stages 4 – 6) to more effectively engage senior students in expressing environmental messages through art works. An art competition was held as part of the project to further engage the students.

Teacher training workshops focusing on sustainability principles and practices were held across six high schools and ran for 40 – 90 minutes. For example, discussions were held with teachers on how art materials are used in the classroom and what happens to an artwork if it is to be disposed of. Through the workshops, teachers gained a deeper understanding of environmental issues as applied to art, enabling them to provide additional sophistication to the lessons, as well as explore and discuss students’ questions more deeply. All the participating teachers agreed that because of the session they were likely to incorporate more sustainability content into their visual arts lessons.

For more information visit the [Woollahra Municipal Councils Environmental Schools Sculpture Prize web page.](http://www.woollahra.nsw.gov.au/environment/education_programs_and_events/schools/environmental_schools_sculpture_prize)

Demonstrating good environmental practice throughout the project

There are opportunities for environmental sustainability within every part of a waste as art project. When designing a project the sustainable use of resources and waste reduction practices can be incorporated. For example, brushes can be cleaned in a small bucket of water rather than under a running tap. Left over clay can be softened and used again and students could be encouraged to use recycled or discarded materials wherever possible. Showcase environmental sustainability by ensuring artworks can be dismantled and their components reused, recycled or composted at the end of the project. This requires some planning and can present an opportunity for more creative thinking. The following six ideas may help inspire students to produce innovative artworks which have minimal environmental impact.

1. Artworks could be made from fully compostable materials such as waste paper, card, or other natural fibres. Components of the artwork could be fastened together by sewing with natural yarns or cottons.
2. Artworks can be made from fully recyclable materials that can be dismantled and recycled at the end of the project. [These](http://www.textileartist.org/textile-artists-using-recycled-materials/) are some good examples.
3. Encourage students to consider how their artworks could be re-purposed or exhibited elsewhere rather than thrown away. If artworks must be disposed of to landfill, encourage participants to include a reflection statement in their entry as to the impact of this process.
4. Where possible encourage students to avoid the use of synthetic glues, welding or otherwise hard to undo methods of joining. Where glue is used, it should be used sparingly.
5. Encourage students to practice folded paper techniques to provide structure, using tying or weaving rather than glue.
6. To help students understand product life cycles, teachers could encourage students to research what raw materials are used in the manufacturing common art materials such as acrylic paints, coloured pencils and other art materials.

Who has done this well?

Woollahra Municipal Council held discussions with teachers on what happens to an artwork at the end of its life. These discussions and brainstorming sessions took place during departmental meetings attended by Visual Arts staff at six local schools. Teachers discussed how some artworks kept by the school could be displayed or dismantled, however ultimately many of them were sent home with the students. This opened an interesting discussion about the need for parents to be engaged in the waste management process as well.

Teachers felt their best opportunity for reducing waste at the end of an artwork’s life was to encourage students to think creatively about how they could use materials and assembly techniques that could ultimately be reused, recycled or repurposed either at school or at home.

Engaging the wider community

Waste as art projects aim to provide positive environmental learning outcomes in local schools where they are held. Primary schools often have good parental involvement and can leverage this relationship to extend environmental and educational outcomes. This can help integrate sustainability learnings and outcomes further across the school, develop community links and share the tasks involved. In some instances, schools have opened their doors to their local community to view the artworks created by students. Visitors to the schools and the exhibitions focus particularly on the artworks themselves and may consider the creative use of waste materials, however there is greater scope to present audiences with opportunities to engage in important environmental conversations and interactive waste management activities. This is an important step for educators who are already delivering awareness raising projects and want to improve the broader environmental outcomes.

Who has done this well?

Woollahra Municipal Council’s Environmental School Sculpture Prize public exhibition coincides with the Council’s Small Sculpture Prize for artists which has been an annual event since 2001. The two Sculpture Prizes are exhibited simultaneously in the council offices for two weeks during October of each year. The annual Sculptures by the Sea exhibition, held since 1997 in nearby Bondi, occurs within days or weeks of the Woollahra events. The proximity of all three sculpture exhibitions and the delivery of curriculum-linked teaching modules in local schools ensures the community is primed for events of this type and educational and promotional opportunities are maximised. Sculpture skills workshops and community sculpture activities run by local artists are held before the Sculpture Prize events to further engage students and the community. Two hands-on activities included during the weeks of the exhibitions were:

* ‘Woven Whale’, where visitors were invited to weave recycled fabrics over whale shaped wire frames at Kids Day Out;
* ‘What a Waste’ where students added their e-waste sculptures to a pile of e-waste sculptures to promote discussion.

[The City of Ryde’s Sustainable Waste 2 Art Prize](http://www.ryde.nsw.gov.au/Events/Sustainable-Waste-to-Art-Prize) provides a great example of a community-based waste to art initiative. Artists and members of the City of Ryde community are invited to enter the competition and exhibition with artworks that relate to sustainable living or waste themes. Youth workshops are held to encourage participants to delve deeper into environmental messages. Stories around climate change, rivers and pollution are woven into the fabric of the artworks taking this competition well beyond a purely waste as art initiative.

Dealing with electronic waste

When waste is buried in landfill, liquid is released from organic material. This liquid known as leachate passes through the other materials in the landfill, collecting small amounts of substances like lead, cadmium and mercury from within e-waste components. Eventually leachate can seep into groundwater, contaminate the soil and enter the food chain. Encourage students to investigate what electronic goods they have at home and what components of that device could be recycled.

The [mobile muster education page](https://www.mobilemuster.com.au/education/) is a helpful resource for this theme.

Engage students in conversations about what they do with e-waste and waste chemicals at home by viewing [The City of Sydney e-waste clip](https://www.youtube.com/watch?v=BwgBMaGP_fE). What services does their local council offer?

[Clean Up Australia’s e-waste fact sheet](https://irp-cdn.multiscreensite.com/ed061800/files/uploaded/clean_up_australia_e-waste_recyclers_factsheet-2017.pdf) provides some great hints and tips for avoiding, reducing, reusing and recycling e-waste.

Who has done this well?

With the help of local high school students MobileMuster created a [large-scale mobile phone artwork](https://www.smh.com.au/technology/national-recycling-week-chris-jordan-turns-mobile-ewaste-into-art-20141112-11kyf5.html) at Customs House in Sydney to celebrate Planet Ark's National Recycling Week. It was designed by internationally acclaimed artist Chris Jordan from nearly 6,000 disused mobile phones.

The massive four by eight metre artwork of an analogue phone featuring the number 23 on its screen highlights the 23 million old and disused mobile phones waiting to be recycled in Australia.

If the 23 million mobile phones were recycled it would lessen the need to mine over 144,000 tonnes of precious metal ore, recover over 397 tonnes of plastic and have the equivalent of environmental impact of planting over 120, 000 trees. The 6, 000 handsets used to construct the artwork are about half the number of mobiles that Australians stash away at home each day, rather than recycling them. Importantly, all phones were recycled after the exhibition.

Learning across the curriculum with waste as art projects

[General capabilities](http://www.acara.edu.au/curriculum/general-capabilities) are a key dimension of the Australian Curriculum. They encompass knowledge, skills, behaviors and dispositions that, together with curriculum content in each learning area and the cross-curriculum priorities, will assist students to live and work successfully in the twenty-first century. Some of the general capabilities can be embedded into waste as art projects.

Literacy

Waste as art projects provide opportunities for developing skills in speaking and listening (to fellow students, the school community, media, the public), reading and writing (online articles, creating artist statements), and viewing and representing (creating and describing art projects). For example:

* expressing views through different media, writing artists statements and
* presenting orally about artworks at exhibition openings.

Numeracy

Waste as art projects can provide opportunities for students to develop their skills in numeracy by identifying and using numerical, measurement, spatial, graphical and statistical concepts and skills. For example:

* collecting, classifying and analysing waste and recycling data and
* interpreting and presenting statistics from surveys completed at waste as art displays and exhibitions.

Information and communication technology (ICT)

Students have the opportunity to become competent, discriminating and creative users of technology as they learn to use ICT effectively and appropriately when investigating, creating and communicating waste as art ideas and information. For example:

* researching waste generation in their local area;
* simulating an investigation using information technology and
* developing an online forum for exchange of ideas.

Critical and creative thinking

Students can develop critical and creative thinking by seeking sustainable outcomes when researching, developing and ultimately disposing of their artworks. They learn to evaluate knowledge about waste and resource efficiency, assess ideas and possibilities and use reason and imagination to direct their thinking for better environmental outcomes. For example:

* researching whole of life impacts of products;
* determining how to construct artworks for better end-of-life recycling or re-purposing;
* retrieving, analysing, interpreting and evaluating information about raw materials and waste materials from a variety of sources and
* organising and planning a project.

Personal and social capability

Students develop personal and social capability as they learn to understand and manage themselves, their relationships, lives, work and learning more effectively. Through taking part in waste as art project planning, implementation and evaluation tasks students learn to identify and express their own opinions, beliefs and responses and to interact confidently and appropriately in a range of social contexts. For example:

* working co-operatively with others in developing artworks or organising art exhibitions;
* taking individual and group responsibility for aspects of the project and
* communicating with a range of stakeholders and making decisions around best practice approaches to project management.

Ethical understanding

Creating artworks that reflect environmental and social or human rights messages and issues provides a positive tool for strengthening a student’s capacity for ethical understanding and commitment to ethical behaviour. For example:

* researching the lifecycle of clothing manufacture and its impacts on the environment and on workers as part of designing a waste as art clothing piece.

Intercultural understanding

Participating in waste as art initiatives provides students with opportunities to deal with cultural diversity in a positive and informed manner, showing awareness, understanding and acceptance as they participate in local or regional projects and research different cultural attitudes and perspectives on waste and the environment. For example:

* students actively engage migrant or indigenous communities in their waste as art projects and
* students showcase art projects in aged care facilities and communicate with the aged on their aims, objectives and outcomes of the project.

[Cross-curriculum priorities](http://www.acara.edu.au/curriculum/cross-curriculum-priorities) provide students with the tools and language to engage with and better understand their world at a range of levels. The priorities provide dimensions which will enrich the curriculum through development of considered and focused content that fits naturally within learning areas. Incorporation of the priorities will encourage conversations between learning areas and between students, teachers and the wider community. Waste as art provides opportunity to incorporate the cross-curriculum priority sustainability.

Waste as art projects can deepen our understanding of sustainability and the challenge waste presents to a sustainable future. Waste is an issue that has personal, local, national and global sustainability contexts and can be addressed by a range of years and learning areas. The issue of waste has intergenerational impacts as which students could explore. Students can:

* research the items of waste they are using to construct their artworks;
* identify, research and analyse why material in the artwork may represents a risk to the environment or human health;
* state the case for why a more sustainable and environmentally sensitive material could be used in place of this material in our everyday lives;
* research options and processes for how this material should be returned to a waste stream for recycling at the end of its life as an artwork and
* investigate materials used in the past that have now become significant waste issues for current and future generations.

Who has done this well?

Woollahra Municipal Council developed teaching resources as part of their Environmental Trust-funded Environmental School’s Sculpture Prize project. Several lesson plans were written for Stage 2 and Stage 3 students to explore three themes within the broader context of local, national and global environments and encourage reducing waste. The themes covered are; Precious Water, Precious Resources and Precious Plants and Animals.

The lesson plans were received extremely well by teachers and are available on the Woollahra Municipal Council website. The lesson plans included in this guide are adapted from [these resources](https://www.woollahra.nsw.gov.au/environment/education_programs_and_events/schools/environmental_schools_sculpture_prize/lesson_plans) produced by Woollahra Municipal Council.

Collecting data and the evaluation process

Collecting good data is critical to evaluating the environmental outcomes of projects. Plan for data collection and evaluation from the project beginning to get an accurate understanding of what the project has achieved. Evaluate behaviour, change through measures such as recording lesson participation or surveying students’ attitudes. Plan relevant ways to measure project success and always check your assumptions to make sure your conclusions are logical and evidence-based.

The school community is a good place to start collecting data. Gather baseline data from students by measuring attitudes and behaviours. Students could complete a questionnaire on existing attitudes and knowledge. For example, students could assess what’s in the waste and recycling bins either at school or at home. The NSW Environment Protection Authority have created a [bin contents survey sheet](https://www.epa.nsw.gov.au/-/media/EEE5DAB02628436EB270F86A1774E675.ashx?la=en) that can be used to get started.

Creating a baseline and tracking progress throughout a project is not only more engaging for students, it helps to determine whether the project has been successful, identify room for improvement and celebrate success. Surveying audiences before and after viewing students works on the following topics could also help to create useful data for future projects;

* attitudes towards environmental issues;
* existing efforts to live a more environmentally sustainable lifestyle;
* knowledge of the amount of energy required to produce and recycle objects such as shampoo bottles, aluminium foil and glass jars and
* knowledge of product lifecycle, from raw materials through to recycling/disposal.

Providing inspiration from the art world

Waste as art projects encourage creativity and originality and the best way to inspire this within students is to provide examples of what other artists are creating using recycled waste materials. A research task could provide students with inspiration and ideas for their own artworks. Some contemporary Australian artists that could be used as stimulus are Fiona Hall, Jane Gillings, Claire Healy and Sean Cordeiro.

Using a curator

A curator works to satisfy the artists and the audience and is skilled at ensuring the exchange between the artwork and the audience is a positive one. Curators are also aware of the ethics surrounding the display of artworks. For example, a curator will consider how the artwork and artist are acknowledged and how members of the public are able to identify a piece of artwork. It may sound simple, but it takes knowledge and a creative and trained eye to get it right

Having a diversity of artworks across a range of subject matter and forms will further enhance the experience of the audience. Consider using a gallery space if possible. Galleries often have equipment and skilled personnel including curators to help with your exhibition. You should also consider venue location and accessibility. Ideally you want your venue to be located close to public transport, have disability access and provide an inviting atmosphere for artists and visitors.

Who has done this well?

The City of Ryde employs a qualified art curator to stage its [Sustainable Waste 2 Art Prize](http://www.ryde.nsw.gov.au/Events/Sustainable-Waste-to-Art-Prize) exhibition in 2015. The results were impressive with visitors and artists alike benefiting from the careful attention to detail. The exhibition was held over two weeks at the See Street Gallery in Meadowbank with 79 artworks selected for exhibition. The entries were of a high standard and very diverse. According to curator Cassandra Hard-Lawrie the artworks demonstrated a strong concern amongst artists and young people for up-cycling waste materials. Cassandra also stated that the inclusion of the new Sustainability Theme Award encouraged artists to submit works that demonstrated an innovative use of waste materials. Many artworks also included profound messages on the importance of addressing contemporary waste and sustainability issues. Explore the [Sustainable Waste 2 Art Prize](http://www.ryde.nsw.gov.au/Events/Sustainable-Waste-to-Art-Prize) including 2017 finalists and photos of the most recent exhibition.

How to run a waste as art project

A successful waste as art project can help create awareness of waste in our society; enhance knowledge, understanding and skills; influence values and attitudes or encourage more responsible behaviour. Effective waste as art projects will:

* involve stakeholders (students, teachers, parents and even the local community) in decisions about the planning, management, content, style and delivery of the project;
* create a supportive environment for influencing behaviour;
* support and strengthen existing community networks and help create new ones;
* motivate and encourage ownership;
* provide opportunities for examining beliefs and values and
* identify and promote positive actions.

The following six step process will help to guide you through planning a waste as art project.

Step 1 – identify environmental issues

Consider the following questions:

* What is the issue that the project will address?
* Why is it an issue? Why is it important?
* For whom is it an issue?
* To what extent is it an issue in our school and/or community?
* How can we create discussion and debate about the issue?
* How can we help address the issue?

Identify and document the environmental issue you aim to address. Ideally, your answer should relate to waste reduction, increasing biodiversity within school grounds, water conservation or other environmental sustainability issues. Question teaching staff, students and the broader school community to gain a mix of perspectives and to gauge the existing level of understanding.

Step 2 – identify project objectives and outcomes

Consider the following questions:

* What changes in attitude do you wish to achieve?
* What changes in behavior do you wish to achieve?
* What curriculum outcomes will be met?

Consider how many resources you will need to allocate, establish clear deadlines and think about the expected results. For example, will your project require an exhibition, local media coverage or do you aim to change students’ attitudes? Set specific objectives to achieve measurable outcomes. Objectives should be measurable, include a goal and a timeframe and ultimately be evaluated to show how successful a project has been.

You may wish to consider the following types of objectives as part of your waste as art project:

* Knowledge objectives: improve knowledge of broad sustainability issues within the school community and specifically waste and recycling issues and opportunities;
* Attitude changing objectives: students to review product lifecycle and understand their role in reducing waste and making informed purchasing choices;
* Behaviour changing objective: to encourage your school to purchase only 100% recycled paper products. Or to reduce waste to landfill from you school by 40% over the next year and
* Curriculum links and outcomes: link the project to curriculum outcomes.

A simple objective might be to have a well-attended school exhibition, in which case you need to set a target number of attendees, record attendee numbers and possibly compare it to previous events.
A slightly more ambitious objective could be to change attendees’ *attitudes* as a result of an exhibition. You can create a baseline by surveying people before they enter the exhibition, and again at the end to determine what they have learned and if their attitudes have changed.
A more difficult objective is to change attendee’s *behaviours* to be more environmentally sustainable, which involves creating a baseline and surveying them weeks or months further down the track. While this is more difficult to do, this is where your environmental project can really start to pay off.

Set realistic objectives for the size and duration of your project, which could be to improve understanding of an environmental issue, or to deliver environmental outcomes such as planting trees or reducing the amount of litter in the playground. Plan relevant ways to measure success and always check assumptions to make sure your project objectives and outcomes are logical and evidence-based.

Step 3 – consider partners and stakeholders

Your key partners and stakeholders may include councils, community groups, art groups, other schools, media and elected representatives. Ask students to identify stakeholders and engage more deeply with the issues by considering the following questions:

* Who has a stake in the issue (positive or negative?). This could include, your class, your year group, school administrators and executive staff, the broader school community (parents, teachers and students across the whole school), local media, local art galleries, environmental education groups or local politicians;
* Who is affected or concerned by the issue? Consider involving groups with all or some of these issues already on their agenda. Refer to the research you did in identifying the issue during Step 1 of the process;
* Who are the key people to assist with your project? While you may have several stakeholders, consider also who are your project partners might be. Who can help you plan, develop, implement and evaluate your project? There may be other teachers that could become or community or parent volunteers with skills and interest in recycled art, environmental protection or waste management generally and
* What are the threats, risks, costs and benefits to stakeholders? Consider the risks and opportunities for all stakeholders and partners and discuss these with them. Identifying risks and opportunities, costs and benefits early in the project will ensure that everyone is working towards the same outcomes and that there will be no surprises at the end of the project.

Consider the level of involvement your stakeholders and partners might want. Do they want to be actively involved, assisting with art projects, organizing exhibitions or seeking funding opportunities? Open and transparent communications with partners and stakeholders will help to define how involved in the project they will become.

Step 4 – funding a project

Nearly all projects, even small ones, need funding to make them happen, so you will need a budget. Stakeholders and partners can provide in-kind support, be it time, resources, space or expertise. Consider the following questions:

* What is the estimated cost of the project?
* What funds are available?
* What funds are needed?
* What in-kind support can be accessed?
* Who may be interested in financially supporting the project?

Step 5 – initiating a project

Consider what specific actions are needed, along with the following:

* What are the key tasks?
* Who is responsible for each task?
* What is the timeframe and what are the project milestones?

Delivering an action plan is the process of putting project objectives into action and can guide the day-to-day activities of a waste as art project.

An action plan should identify:

* project aims and objectives;
* the steps to take to reach the objectives;
* a timeline for each step;
* who is responsible for making sure that each step is successfully completed and
* resources needed for the project.

Monitor the action plan regularly to ensure the project is on track. A simple table or spreadsheet can be used to track progress. Remember to schedule regular project team meetings to help keep everyone on track.

Step 6 – project evaluation

Develop evaluation methods and strategies in the planning phase of the project. Gather information during the implementation of the project so that progress can be reviewed and monitored. Evaluation will help to keep the project on track and to prove how effective it was once it is finished. Refer to the Collecting data and the evaluation process heading on page 13 of this document for additional tips. When designing an evaluation plan, remember it needs to:

* measure learning to determine how effective your waste as art project is as a learning experience;
* assess progress to find out especially whether environmental objectives have been met;
* improve the quality of the project to reflect on what is happening and adapt if needed;
* enhance accountability to demonstrate results to community and colleagues and
* communicate results to those directly involved, to colleagues and to wider community by building up a body of evidence of the effectiveness of waste as art projects.

Teaching resources and lesson plans

As part of this guide, three learning themes have been adapted from the original series of work produced by the Environmental Trust-funded Woollahra Municipal Council project. Units of work have been developed across the three learning themes to support teachers in further applying the educational aspects of a waste as art project whilst enabling students to build their confidence as they submit their works. The three themes are biodiversity, resources and water.

**Biodiversity (Precious Plants & Animals)**

Biodiversity can be described as the variety of plants and animals (species) and the places they live (ecosystems). The biodiversity theme encourages students to develop an artwork that represents some aspect of conserving biodiversity. For example, drawing attention to the problems our plants and animals face, highlighting the beauty and complexity of our plants and animals, or providing hope and imagination in the way we could support and enhance the biodiversity and ecosystems around us.

**Resources (Precious Resources)**

Sustainable production and consumption calls for the effective and efficient use of resources to minimise or eliminate waste for all people now and into the future. The sustainable production and consumption topic encourages students to develop an artwork that represents any aspect of production and consumption in our society. For example, by drawing attention to wastefulness or over consumption, or providing hope and imagination in the way we could reuse and conserve our precious resources better.

**Water (Precious Water)**

Total water cycle management recognises the finite limits to an area’s water resources and is a holistic approach to balancing the competing demands placed on water resources. The key principles include promoting water conservation, preventing pollution, protecting aquatic and floodplain biodiversity and providing and maintaining environmental flows. This resource encourages students to develop an artwork that represents some aspect of the water cycle, or how humans interact with, and affect, this precious resource – from local creeks, to vast oceans.

How to use these resources

The three units of work included in this guide are each a six-part teaching and learning resource that offer lesson ideas and support to teachers. All units are aligned with [NSW Education Standards Authority](http://www.boardofstudies.nsw.edu.au/) (NESA) and the [NSW Creative Arts Syllabus K-6](http://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/creative-arts/creative-arts-k-6-syllabus). Resources have been designed to support schools in combining visual arts with environmental sustainability education, in addition to guiding schools and the wider community to collaborate in waste as art projects. Teachers may however, wish to develop their own teaching units around environmental issues that are of interest to their specific community such as land clearing, erosion, salinity, or eutrophication. In this case, the supporting resources may be useful in providing examples on which to base additional units of work.

Each lesson within the resources has been designed to provide flexibility to suit class needs. The aim is to encourage creative, individual responses. Each activity can be varied to suit individual classes; however, it may be helpful for activities to be worked through in the order they are presented in the resource. Whilst these resources were originally written for Stages 2 and 3, suggestions of adaptation ideas for younger or older students are provided, and extension activities are suggested for further development of the units. Each lesson also contains a list of related key vocabulary, definitions of which can be found in the glossary at the end of the resource.

NSW Department of Education sustainability action process

The sustainability action process provides a scaffold for teachers and students to investigate real issues and needs. It supports problem solving through active student participation. Further information and resources can be accessed on the [NSW Department of Education Learning across the curriculum webpage](https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/teaching-and-learning-resources/learning-across-the-curriculum#Sustainability0).