

Plastic Bag Upcycle

Subject: Art/ ADST	Grade: 2-7	Duration: 1-2 hours
Lesson Overview	<p>In this lesson, students explore the concept of sustainability through the creative process of upcycling. After learning about the environmental impact of plastic waste—particularly single-use plastic bags—they will reuse this material to create an artistic and functional product, such as a bracelet or sleeping mat.</p> <p>Through guided art-making and independent prototyping, students will develop awareness of environmental issues and apply the Engineering Design Cycle to imagine new, sustainable uses for discarded materials. This hands-on experience encourages critical thinking, creativity, and social responsibility by showing how waste can be transformed into something meaningful for personal or community use.</p>	

Curriculum Ties (in addition to satisfying multiple core competencies):

Grade 3-6 Art:

- Exploring and creating
 - Choose elements, processes, materials, movements, technologies, tools, techniques, and environments of the arts
 - Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play
 - Explore identity, place, culture, and belonging through arts experiences
 - Explore relationships among cultures, communities, and the arts

ADST:**Applied Design**

- Ideating
 - Identify needs and opportunities for designing, through exploration
 - Generate ideas from their experiences and interests
 - Add to others' ideas
 - Choose an idea to pursue.
- Making
 - Choose tools and materials
 - Make a product using known procedures or through modelling of others
 - Use trial and error to make changes, solve problems, or incorporate new ideas from self or others
- Sharing
 - Decide on how and with whom to share their product
 - Demonstrate their product, tell the story of designing and making their product, and explain how their product contributes to the individual, family, community, and/or environment
 - Use personal preferences to evaluate the success of their design solutions
 - Reflect on their ability to work effectively both as individuals and collaboratively in a group
- Applied Skills
 - Use materials, tools, and technologies in a safe manner in both physical and digital environments
 - Develop their skills and add new ones through play and collaborative work
- Applied Technologies
 - Explore the use of simple, available tools and technologies to extend their capabilities
 - Social, ethical, and sustainability considerations impact design.

Content Objectives

The students will be able to:

- learn about recycling, reusing, reducing and upcycling.

- Students will build their own upcycled bracelet or sleeping mat.
- They will use the engineering design cycle to think of other ways to promote sustainability in their community.

Materials & Equipment Needed

<p>Consumables:</p> <ul style="list-style-type: none"> • Plastic Bags • Scissors • Duct Tape 	<p>Non-Consumables:</p> <ul style="list-style-type: none"> • Optional: “OnePlasticBag” book by Miranda Paul
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Lesson & Activity

Lesson Stages	Learning Activities
Introduction	<p>Begin with a class discussion about sustainability:</p> <ul style="list-style-type: none"> • Ask: “What does sustainability mean to you?” • Guide students to co-construct a definition based on the ideas of reduce, reuse, recycle and introduce the concept of upcycling. • For younger students, use visuals or drawings to support understanding. • For older students, introduce questions like: “What kinds of waste do we produce every day? What happens to it?” or Watch some videos on the life cycle of a plastic bag and the problems with recycling. <p>Optional Book Read-Aloud:</p> <ul style="list-style-type: none"> • Read One Plastic Bag by Miranda Paul to introduce the story of Isatou Ceesay and her work turning plastic waste into something useful in The Gambia.

	<ul style="list-style-type: none"> • Have a discussion with students about the book and then about what reduce, reuse, recycle means.
Activity	<p>After teaching about sustainability and the importance of upcycling materials to prevent them from going into the landfill, try some art with plastic bags.</p> <p>Use plastic bags and other discarded materials to create an artistic item that reflects the principles of upcycling and sustainability.</p> <p>Grades 2–4: Plastic Bag Bracelets</p> <ul style="list-style-type: none"> • Cut plastic bags into strips. • Braid or weave the strips to create plarn (plastic yarn). • Use duct tape or string to finish the bracelet. • Encourage students to explore colours, patterns, and creativity • How to make plarn video: https://www.youtube.com/watch?v=gQwTcizA7Oo <p>Grades 5–7: Sleeping Mats or Functional Upcycled Items</p> <ul style="list-style-type: none"> • Create larger strips of plarn. • Follow guided instructions (video or printed handout) to create: <ul style="list-style-type: none"> ○ Sleeping mats for shelters ○ Small baskets or reusable bags ○ Knit or crochet items (if materials and skills allow) • Consider donating finished products to a local shelter or displaying them in school. • Sleeping mats for homeless instructions: https://thesavvyage.com/turn-your-plastic-bags-into-sleeping-mats/ • Knitting instructions: https://www.thesprucecrafts.com/how-to-make-plarn-2117354 • Basket Instructions:

	<p>http://radmegan.com/2012/03/going-green-with-wrapped-baskets.html</p> <p>Engineering Design Challenge</p> <p>Introduce the Engineering Design Cycle and give students a mini challenge:</p> <p>Ask: What other uses could you invent for plastic bags or other classroom waste materials?</p> <p>Students work in groups to:</p> <ul style="list-style-type: none"> • Imagine: Brainstorm creative uses for waste materials (beyond art). • Plan & Create: Sketch a prototype and build it using leftover materials. • Test & Improve: Share the function of their creation and reflect on what worked or didn't. <p>Use a simple worksheet or visual template to support their ideation process. You may choose to scaffold more for younger students.</p>
Closure	<p>Bring the class together to:</p> <ul style="list-style-type: none"> • Showcase their upcycled creations or prototypes. • Share what inspired their design. • Reflect as a group: • What surprised you? • What else could be upcycled at school or home? • How did your thinking about waste change today? <p>Optional Writing Extension: Write a short journal entry about the experience.</p>

<p>Step Ups & Step Downs</p>	<ul style="list-style-type: none"> • Follow up with a writing activity on how students plan to continue to reduce, reuse, recycle and upcycle at school. • As a class, write letters to the municipality asking for a plastic bag ban.
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Background Knowledge

- **About the book “One Plastic Bag”**

The problem of waste is a global issue. The problem is even greater in Africa where waste contributes to many environmental issues. For over 17 years, Isatou Ceesay has been working with women to solve this problem by repurposing plastic waste.

Isatou Ceesay was born in Njau, Gambia in 1972. From the 1970s through the 1990s waste from plastic bags became a serious issue in Gambian cities. Due to the plastic waste, gardens were unable to grow and goats were eating the plastic and dieing.

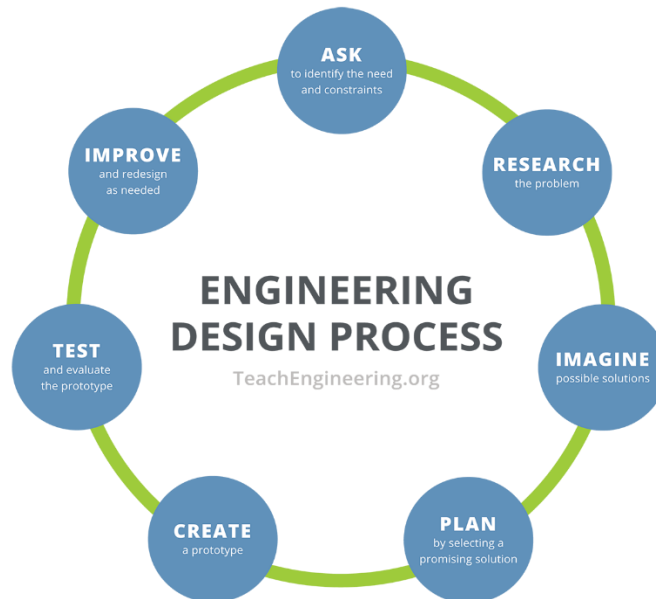
Villagers were burning the plastic waste. They used the plastic to light their stoves. Burning plastic gives off toxic fumes which are harmful to breathe and pollutes the environment.

- **Why is upcycling important?**

The world has about 8 billion people on it, and we produce a lot of trash, which has sadly been filling landfill sites and harming the environment. The average household in the UK produces more than a tonne of waste every year. Put together, this comes to a total of 31 million tonnes per year! The population is growing year on year, which means we need to produce more of everything, which in turn creates more rubbish. So, instead of filling up our landfills with more waste, it’s important that we take the time to recycle more and upcycle as much as we can.

Read more here on why landfills are bad for the environment.

The Engineering Design Cycle:



- Ask
 - What is the problem we're trying to solve?
 - What are the limits that our solution needs to follow?
- Research
 - Has someone already created something like this?
 - Who are the experts in this field?
- Imagine
 - Brainstorm a large quantity and variety of ideas before narrowing the options.
- Plan
 - What criteria should we use to narrow down our ideas?
 - Which ideas need to be screened based on the original constraints we identified?
- Create
 - What kind of prototypes can we create? A sketch, scale model, CAD model, computer simulation, etc
- Test
 - What does our final design need to accomplish? Can we test this with the prototype we made?

- Run an experiment
- Create a computer simulation
- What information are we looking to gain from these tests?
- Improve
 - Based on the results from the testing, what can we improve on our design?
 - Are there certain aspects we found too difficult to create?

Additional Resources

- 10 facts about single-use plastic
https://www.biologicaldiversity.org/programs/population_and_sustainability/sustainability/plastic_bag_facts.html#
- Reduce, Reuse, Recycle video
https://www.youtube.com/watch?v=OasbYWF4_S8
- For older students: The problem with recycling
<https://www.youtube.com/watch?v=ARBqPuvYq0c>
- An artist collects plastic bags to prove that even garbage can be beautiful
<https://littlethings.com/lifestyle/nazrin-musayeva-plastic-bag-art>
- Creating a sustainable school
<https://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/teach/teaching-tools/environmental-learning/sustbestpractices.pdf>