



PLASTIC

Upcycling Projects

Upcycling project ideas to inform, inspire & educate the community.



Thank you for your interest in plastic pollution education and awareness. For more information or to participate in an outreach program contact:

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Welcome to the City of Charleston Stormwater Program's collection of upcycling plastic projects. Some projects in this booklet began with us, but many others belong to talented and creative people that have inspired us. We hope this collection will inspire you.



The Charleston Stormwater Management team is committed to ensuring full compliance with the Clean Water Act requirements to ensure our local water resources remain free of harmful pollutants. Our goal is to educate the citizens, general public, school aged children, and businesses (including contractors and developers) on stormwater pollution prevention solutions and techniques to protect our streams, creeks, and rivers to improve the quality of our most precious resource.



Flip the flop...

Environmental Fact:



Flip flops are one of the top 10 plastic littered items found on beaches? Ocean Sole recycled over half a million flip-flops in 2017 and over a million in 2018. They contribute over 10-15% of their revenue to beach cleanups, vocational and educational programs as well as conservation efforts. They flip the flop!

Classroom Connections:

Business, entrepreneurship & problem solving. What problem did this business address in its area of the world? Ocean Sole considers itself a 'social enterprise.' What is a social enterprise? What is a nonprofit business versus a for-profit business? What problem would you solve in your community with a business?



Making a Difference

In this guide:

You will find these sections with suggestions for upcycling projects.

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Ocean Sole is a social enterprise that upcycles washed up flip-flops found along the beaches and waterways in Kenya. Inspired by the toys children were making out of the flip-flop debris, Julie Church, Ocean Sole Founder, encouraged their mothers to collect, wash, and cut the discarded flip-flops into colourful products to sell at local Kenyan Markets as another means of income for their families.



oceansoleafrica.com



Also in this guide you will find:

Classroom Connections:

Ways to connect projects to curriculums and subjects in the classroom.

Environmental Facts:

Facts about plastic pollution & its impact on our environment.

Tips:

Tips learned the hard way when it comes to gluing plastic to plastic, manipulating plastic, cleaning plastic and using it for upcycling projects.

Animals

Upcycling plastic into animals for environmental education is a way to introduce the concept that our behaviors & choices impact the environment. The world's wildlife population is gravely effected by plastic pollution.



Classroom Connections:

There is no limit to the connections upcycled art with animals can create.



Environmental Fact:

Plastic shampoo bottles, like these to the left, will take 450+ years to decompose. In June, 2019 National Geographic reported that by 2050 there would be more plastic in the oceans, by weight, than fish. Without intervention, that could continue to be the case for hundreds of years.



(Above) Plastic bottles used to create race cars. Perhaps the next Soap Box Derby idea! (Below & right) A hand bag and rug crocheted from single-use plastic bags.



(Below) Milk crate furniture created by a Stockholm design student for a Plastic Upcycling Design Competition.



Not your average Plastic Projects.

One man's trash...is another man's trash can?
If you are looking for a more challenging plastic project, this is for you.



Shampoo bottle to cell phone holder. This project would require some finer motor skills.

Classroom Connections:

Use the resources you have around you. High School and College students can amaze you with their innovation and building skills. Challenge Art & Design students to create upcycled projects. Display them at your local municipality building or in vacant store fronts in your town.

Classroom Connections:

A totem pole can double as a lesson on stewardship, as well as Native American studies or the food chain.



Environmental Fact:

In 1960, plastic was found in the stomachs of less than 5% of seabirds, but by 2010 this had risen to 80%. Where are we now, nine years later?

Facing Plastic Head-On!

Environmental Fact:

The waters surrounding Easter Island contain one of the highest concentrations of microplastics in the world, most of which originates from sources thousands of miles away.
-plasticoceans.org



Classroom Connections:

The faces above and left are reminiscent of Easter Island's Moai statues & could be used to introduce a lesson on ancient history, geography, ocean currents, biodegradation, micro, macro and/or nano plastics.



BAG MONSTER

1 YEAR, 1 SHOPPER, 500 BAGS

Create a Bag Monster Costume for awareness in your town! Conceived by Andy Keller, this represents how many bags the average shopper uses in one year.

Environmental Fact:

Plastic bags take an average of 20 years to decompose, are commonly mistaken as jellyfish by sea turtles, and blow into our streams and rivers easily every day.



Yoshi the Fish by Tony Walsh sits on Malpe Beach, Mangaluru, India. The statue garnered so much attention, was copied in three other coastal areas. His sign reads, **"Yoshi loves plastic, please feed him!"**



Create Conversations!

Ambient Advertising: placing ads on unusual objects or in unusual places where you wouldn't expect to have an advertisement.

When 'No Butts About It' started picking up butts around Charleston, WV, one member wanted to bring more to attention to the littering of cigarette butts by creating something to leave behind for the public to see! (right & below) They created large cigarette butts from old pool noodles.



Environmental Fact:

Below, a friendly reminder... Butts are cellulose acetate & stay in our environment for 13+ years!



Environmental Fact:

Plastic persists in the environment forever. Overtime, it breaks down into smaller pieces, becoming microplastic, macro & eventually nano.

Nano plastics are 1,000x smaller than an algal cell.



TIP: Painting Plastic

- 1—Plastic primer is available as a spray paint in many colors. Once plastic has been primed, any acrylic paint can be applied, including treated paint finishes like the stone paint to the left. A clear sealer is recommended.
- 2—Sharpies can be used on clear plastic and make a translucent finish.
- 3—Mod Podge can be used for fabric or tissue paper applications, as shown above. After tissue paper has dried, any acrylic paint can be used. Sealer is recommended.

Happy Holidays!

Upcycling plastic products for Holiday gifts & decorations.

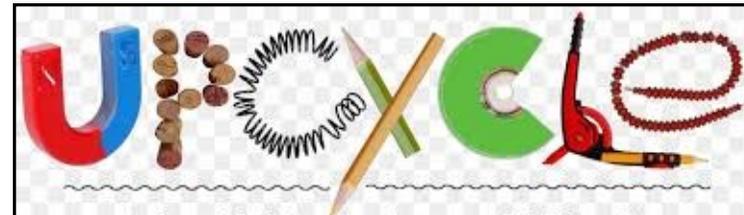


Online resources have caused a reduction in the need for CDs & DVDs . Above is a great Christmas ornament to upcycle & eliminate their time in the landfill. Below, soda bottles used for your Valentine messages!



Classroom Connections:

This is an all-time favorite! Skeletons made from plastic jugs could be a classroom art project, a lesson in anatomy, or the study of Mexican culture!



An Event Celebrating Resourceful Education



Create a workshop for school age children during the summer or holiday recess. Left is an Upcycling Workshop held in honor of 'Plastic Free July.'

Join an existing event to bring awareness to your organization and plastic pollution! Charleston Area Alliance sponsors the Downtown Open every year where businesses create a putt-putt hole.

Below is Charleston Stormwater Program's putt-putt hole from 2019, made to bring awareness to the pollution of single use plastics.



Create an Event!

Start a plastic upcycling event or workshop in your area!



(Left) Charleston Town Center's Re-Fashion Show. Contestants design & model clothing made from upcycled material. (Picture from 2017.)

TIP: Attaching & Gluing Plastic to Plastic

- 1—E6000 epoxy (glue) works very well for attaching plastic to plastic. However, it is not compatible to Styrofoam. The chemical reaction between the two causes the Styrofoam to dissolve.
- 2—Hot Glue works OK on plastic, but it will become brittle over time & break apart. Hot Glue does work well on Styrofoam.
- 3—Snaps and rivets can be used to attach plastic together (bottomright).
- 4— Plastic can be sewn, as seen in the dress to the left.

Above, skirt & bodice made from trash bags, geo-grid, and green newspaper protector bags. Flowers on shoulder made from the bottom of plastic soda bottles, colored with sharpies and melted with a hot air gun.

Classroom Connections:

Create public awareness with a Christmas tree made from plastic water bottles. Set up a recycling bin to collect bottles from your office or school. It may be eye-opening to realize how many plastic bottles have been consumed in a short amount of time.



(Above) Styrofoam coolers are used to create a snowman. Polystyrene (Styrofoam) is a form of plastic & these are often single-use.

TIP: Cleaning Bottles

- 1—Hot water & wash is a good way to start.
- 2—Goo Gone works well at removing stickers from bottles.
- 3—Nail polish remover will take off the date that is printed on containers.



Left, one gallon milk jugs are used to create Halloween ghosts. These can be drawn free-hand or with as stencil using permanent markers. Cut a hole in the back and fill with Christmas lights.

Flora & Fauna!



Mushroom (above) made from a latex balloon & melted water bottle.



Poppies (right) made from water bottles, sharpies, heat gun & electrical wire.

Daffodils (below) made from soda bottles, sharpies & a heat gun.

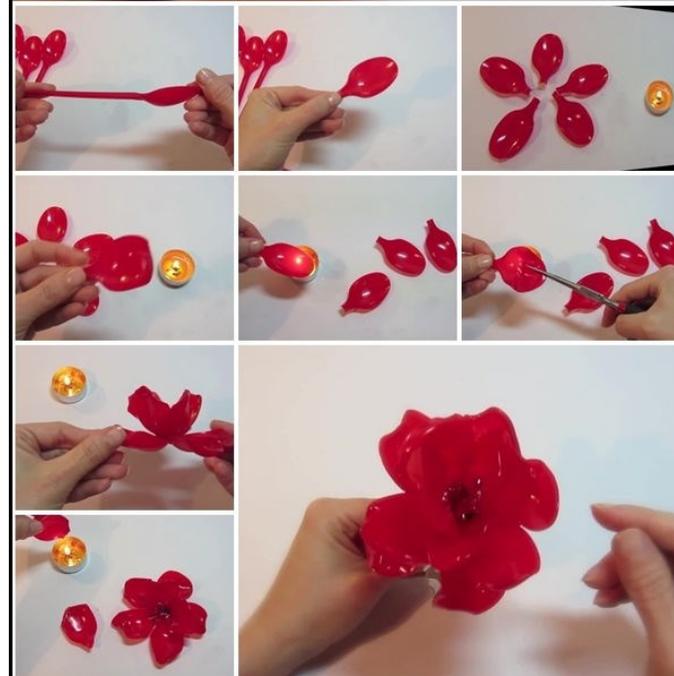


Cacti (right) made from green plastic bottles & caps.



TIP: Melting & Manipulating Plastic

- 1—A regular craft heat gun melts plastic, making it stronger, thicker & pliable while warm. Use a needle nose pincer to hold plastic cut outs while heating.
- 2—A candle flame will heat plastic also, see below where plastic spoons have been melted and manipulated with a flame.
- 3—Straws can be placed between parchment paper and ironed. The straws will melt and bond together.



One example of a crafting heat gun.

Classroom Connections:

Flora & fauna upcycled projects can be used to while teaching plant reproduction, or desert climates. The imagination is the only limit.