



ELEMENTARY CLASSROOM ACTIVITY

OBJECTIVE

Students will design, build, and optimize a solution for reusing plastic waste in their community.

Be creative and try to help the world around you.

For instance...

- A plastic bottle turned into a birdfeeder could help provide nutrients to animals.
- Plastic cups turned into planters could help restore ecosystems.
- Plastic bags turned into a classroom recycling holders could help reduce pollution!

Plastic Patrol

OVERARCHING QUESTION

How can communities reduce impact of plastic waste on the environment?

WHAT'S THE PROBLEM?

Every year...

- Americans buy **50 billion** plastic water bottles.
- People around the world use **500 billion** disposable cups.
- Americans throw away **100 billion** plastic bags.

Plastic bags, throw-away cups, and plastic bottles are all called “single-use” plastic because—more often than not—they are only used once! Many of these plastics blow into local waterways and our world’s oceans, even when they’re on their way to a landfill or recycling plant. If we continue to use and throw away plastic like we do today, there will be more plastic in the ocean than there are fish by 2050.¹

COLLABORATE AND BRAINSTORM

Looking forward, the best way to solve this problem is to stop buying and using single-use plastic—but that doesn’t help solve the problem of what to do with the plastic products we already have.

Work in small groups to brainstorm:

- How could you collect plastic bags, bottles, or cups before they are thrown away in your home or at school?
- How could you repurpose (or reuse) these plastic bags, bottles, and cups? Try to think of new uses that will help the environment and your community!

DESIGN AND CREATE

Apply your ideas and take action:

1. Collect single-use plastic from your home and/or school.
2. Look at the plastic you collected. Then create a labeled sketch on the Plastic Design Center handout that illustrates how you will repurpose this plastic. Try to limit the waste you produce and use as few additional materials as possible.
3. Build your creation using the plastic you collected and your design as your guide.

MAKE IT BETTER

Partner with another group and share your plastic creations. Take turns explaining your favorite part about the other group's design and offer one suggestion for improvement. Your suggestion could help the other group include more plastic or provide a way to make the design more useful to your community.

Then work with your own group to apply the feedback you received and make your design even better!

KEEP IT GOING

How could you continue this project or inspire your community to use fewer single-use plastics?

K-2 CONSIDERATIONS

Send a letter home asking families to send rinsed single-use plastic items to school. Once you have a collection to work with, discuss possible uses as a class before dividing into groups for further brainstorming.

STANDARDS

Next Generation Science Standards

ETS1.B: Developing Possible Solutions

- Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions.
- At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.

Source

1. "Earth Day." EarthDay.org. earthday.org/fact-sheet-single-use-plastics.

Below, list or sketch the plastic that you collected:



Now brainstorm *how* you can repurpose this plastic into new designs that will positively impact the environment or your community. Try to use as few other materials as possible!

Tip: As you include materials from above, cross them out so you know what you have left to use.