

# MINE YOUR TRASH UPCYCLE YOUR PLASTICS CHALLENGE

## Instruction Sheet

Have you ever heard the phrase: “One person’s trash is another person’s treasure”? Trash bins and landfills are filled with valuable materials! Materials that we can make into new, shiny, and useful things. Join us in our “Mine Your Trash” challenge to reduce the number of items that end up in landfills!

### MATERIALS

Ask a parent or guardian before getting started. You will need different materials depending on what you plan to create. Below are some ideas for materials. **Make sure to ask permission before using hot tools such as an iron or hot glue gun. See next page for safety instructions.**

- Plastic (bags, bottle caps, containers etc.)
- Clothing iron
- Paint & paint brushes
- Parchment paper (unbleached & compostable if possible)

### INTRODUCTION

Argonne is currently doing a lot of research to address the issues of pollution, greenhouse gases, and climate change. For example, Argonne is working on upcycling, which uses the same building blocks of one material to make something of greater value. For example, turning plastic bottles into automotive lubricants. While many materials are recyclable, they often end up in landfills. Urban mining is when precious metals and materials, often found in electronics, are recovered from landfills to be repurposed. To learn more about Argonne’s efforts, check out [this news article](#).

### CHALLENGE

Some companies are known to make new products like shoes out of used plastic water bottles. Now it’s your turn! Create a new product by upcycling plastic and other nonbiodegradable materials at home. Challenge guidelines:

- Upcycle-** This means you should be using material to make something better. For example, turning plastic bottle caps into buttons or plastic bags into a jump rope.
- Stay Safe-** Make sure you ask an adult for help and permission before using any special tools or equipment such as a hot glue gun or an iron.
- SHARE YOUR PROJECT WITH US!** Share a picture or video of your product. Let us know what you made and how you made it. **We will share submissions on @Argonne\_Education on Instagram.**



Image Source: Argonne National Laboratory

### ACTIVITY HIGHLIGHTS

- Create a new product by upcycling plastic.**
- Send us a picture or video and let us know how you made it!**
- Pitch your product!**

**Don't know where to start? Check out some of these ideas:**

- Jump rope made of plastic bags**
- Planters made from plastic bottles**
- Laptop or tablet sleeve made out of fused plastic bags**

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## Data Sheet



### SAFETY NOTE!

#### General Safety Guidelines When Working with Hot Tools/Appliances

1. Appropriate adult supervision- Ask permission from an adult before using any tool.
2. Be careful where you place hot tools, and make sure they are not in contact with anything that is flammable or can be damaged by heat.
3. Read any product instructions, warnings, and/or other information on the hot tool product you are using.

#### Safety Guidelines When Fusing Plastic with an Iron

1. Place the plastic you want to fuse on top of a piece of parchment paper.
2. Place another piece of parchment paper on top of the plastic.
3. Use clothing iron on medium setting and press/iron plastic over the parchment paper. **DO NOT PUT HOT IRON IN DIRECT CONTACT WITH PLASTIC.**
4. Check plastic periodically to see if it is fusing together. It may take several passes with the iron before it fuses. You can also press down and hold iron for several seconds.
5. Adjust heat setting if the medium setting isn't fusing the plastic after several attempts. Gradually increase the iron temperature setting until you find one that works.
6. Remember to unplug iron and allow it cool once you are done.



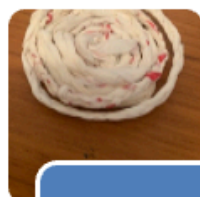
Earring made from plastic. See below for procedure.

### EXAMPLE:

"I upcycled part of a plastic bag and an old stud earring to make a new, larger, colorful earring."



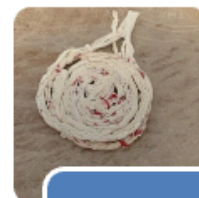
Cut plastic bag into strips then braid.



Create a design.



Place design between parchment paper. Iron to fuse.



Repeat until design is fused to your liking.



Paint.