

Recycling Code-Scavenger Hunt



Recycling Robot Rampage!

“Would someone pass the ten-millimeter ratchet?” A voice called out from under the car.

“You don’t need a ten, you need a thirteen.” Zoey said while still staring at her *Zombie World* magazine.

Sue slid herself out from under the car. “No. I need a ten.” Then she slid herself back under the car.

Zoey dragged herself over to the toolbox with exaggerated effort and fished out a thirteen millimeter ratcheting box-end wrench. “You’re working on the intercooler? You discovered that you have to move the radiator to make room for the piping, right?” Replied Zoey before she slid the tool precisely to where Sue’s hand was feeling around on the floor. “You need a thirteen.”

Shea poked her head out from under the hood, “Goth-girl’s got a point. Radiator bolts are a thirteen.”

“Guys, I should know! I’m staring right at the bolt!” Sue began until...*clunk clunk clunk...rattle rattle... click click click click click*. The random tool sounds continued for several minutes until Sue emerged from under the car. “It was a thirteen.”

CRASH! Without warning, the back wall of Sue’s secret supercar garage exploded as a rampaging robot burst into the room!

“Acquire. Acquire...” Repeated the robot in a mechanical voice. With a vacuum hose arm it sucked up Shea’s toolbox. “Recycle Recycle...” it began, as it’s body shook violently before making a series of grinding, hissing, and cranking noises. Moments later, a second hose arm spooled out and spewed what appeared to be a stack of boys underpants, made out of steel, still painted the same color of what had just moments ago been Shea’s toolbox.

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"Stop that robot!" G shouted as he rushed in through the hole in the wall and then came to a confused stop. "Did he just turn your toolbox into underpants?"

"It's worse than that," Zoey interjected, "They're tighty-whities! Dude, you NEED to update the program to boxer-briefs!"

"That's the problem," G shouted back, "I haven't finished the program yet! It's supposed to be a recycling robot, but right now it doesn't know what recyclable materials are or what they're used for!"

The robot whirled around sucking up the front wall of the garage. "Acquire. Acquire...Recycle. Recycle." The robot ran out of what was left of the garage, leaving behind a freshly made life sized stuffed pony, made out of steel reinforced concrete.

"Awww, it's so cute," Sue began, but then corrected herself. "I mean, we have to get that thing under control!"

G thought for a second then turned to Sue and her two friends. "Ladies, I need you to go find samples of all different kinds of recyclable materials. Sort them and list what they are. That way, I can get the robot to scan your samples and learn what to recycle and what not to!"

Help G Inventson teach his rampaging robot how to recycle. Right now, [plastic](#) is used to make thousands of different products every day. Most of that plastic becomes [waste](#). Go on a scavenger hunt for plastic waste and make your own [plastic recycling](#) number chart.

The Challenge

Refer to the Plastic Recycling Numbers sheet included with this challenge. Try to find at least three different examples of each type of plastic listed on the sheet. Group the items by recycling number, then finish the chart at the end of this challenge so you can have your own Plastic Recycling Number Chart.

STEP 1: Hunt for samples.

- Look for plastic items in or around your home.
- Each time you find an item, find it's recycling number.
 - The recycling number is usually located on the bottom or the back.
 - The number will appear in the middle of a triangle made of arrows.
- Try to find at least 3 different items for each number.



This is what a recycling number looks like.

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STEP 2: Make your own recycling number chart.

Look at the sheet at the end of this challenge that says: "My Recycling Number Chart."

(You may print this page or copy it on to a separate piece of paper.)

Fill in the blank spaces on the sheet by following these steps:

- Group your items by recycling number. (Hopefully, you found 3 for each number!)
- List the items you found for each number in the boxes under "My Samples" on the sheet.
- Next, fill the rest of the blanks for that row:

Look at the Plastic Recycling Numbers sheet included with this challenge for help!



Each row is for a different recycling number. For example, the items being filled out in the image above are for recycling number 1. That means they are all made out of a plastic called PETE.

- What type of plastic is it?
- Is the material recyclable?
- Is the item reusable? (Aftermarket drink bottles, food storage containers and coffee mugs are a few examples of reusable items. The bottles beverages are sold in or the trays for frozen foods are usually intended for single use only!)

Just to help, some of the answers have been filled in already!

STEP 4: Report your findings.

Send your completed Plastic Recycling Number Chart to your teacher.

- If you completed the chart using a computer, send the file to the teacher.
- If you made your chart by hand, take a picture of the chart and send the picture instead.
- If you have access to a video camera, why not make a video?
 - Record yourself talking about each item on your chart.
 - Show each item you collected as you refer to it in your video.
 - Send the video to your teacher.

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Lessons Learned

Every year millions of tons (over 34 million as of 2017) of plastic are generated for use in products and packaging. Currently about 75% of that ends up in landfills. Plastic recycling codes are a standardized system for helping consumers recognize and identify plastics both for recycling purposes and so they can make more informed buying decisions.

Learning to identify different types of plastic and understanding each type's benefits and detriments is a powerful part of product and packaging design, as well as being useful to help manage your own environmental footprint.

Learning to communicate effectively live or on video is an increasingly useful skill in our twenty-first century world. The option to present the project in video gives students a valuable opportunity to get comfortable being on camera, and speaking about their thoughts and experiences.

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MY RECYCLING NUMBER CHART						
Recycle Number:	Plastic Type:	Is it recyclable ?	Is it Reusable ?	Your Samples:		
	PETE					
			Yes			
						
		Some-times				
	PS					
			No			
	PET					

Plastic Recycling Guide

Number/ Name	Examples	Recyclability	
 PETE	<ul style="list-style-type: none"> • Single-use bottled beverages • Salad dressing containers • Mouthwash bottles 	 /  Recyclable / Not Reusable	
 HDPE	<ul style="list-style-type: none"> • Milk and water jugs • Cereal box liners • Grocery bags 	 /  Recyclable / Reusable	
 V	<ul style="list-style-type: none"> • Food wrap • Plumbing pipes • Lawn chairs 	 /  Not Recyclable / Can be repurposed	
 LDPE	<ul style="list-style-type: none"> • Squeeze bottles • Bread bags • Frozen food bags 	 /  Not Always Recyclable / Reusable	
 PP	<ul style="list-style-type: none"> • Bottle caps • Tupperware • Straws 	 /  Not Always Recyclable / Reusable	
 PS	<ul style="list-style-type: none"> • Disposable foam cups • Egg cartons • Packaging foam 	 /  Not Commonly Recyclable / Not Commonly Reusable	
 OTHER	<ul style="list-style-type: none"> • Baby bottles • Safety glasses • CDs/DVDs/Blu-Ray discs 	 /  Recycling Not Standardized / Reuse Not Standardized	

