

Dr POLLY BUREY



As a child, Polly hoped to be an astronaut so she could explore new environments beyond Earth. Nowadays, she uses science and engineering to help clean our environment by preventing waste. For example, she is looking into easy ways to transform farm and packaging waste into useful items, such as building materials.

I have the same birthday as one of my scientific heroes, Galileo Galilei, who was the first person to look at the moon through a telescope!

LEARN HOW TO CREATE A SMALL MATERIALS RECOVERY FACILITY (SMRF)

a simple experiment designed by Polly Burey, Jessica Pahl and Matt Flynn

Materials:

- 1 big plastic tub or storage container
- 1 bag of glass pebbles
- Paper and cardboard scraps
- Plastic bottles and caps
- Metallic materials around the house (steel nails, coins, steel paper clips)

Tools:

- A small magnet tied to a piece of string
- A net or piece of chicken wire
- A large piece of cardboard

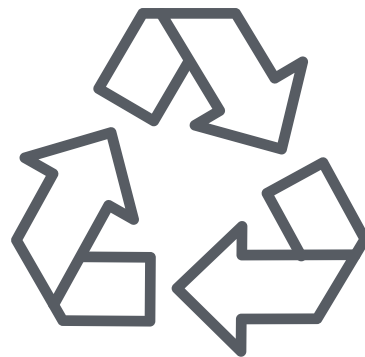
Instructions:

1. Take the plastic tub and put the pebbles, scraps (metallic, paper and cardboard), plastic bottles and the plastic caps together. This mix will represent your yellow bin for recycling.
2. A materials recovery facility has machines that separate waste. But as you know, machines do not have hands or eyes like ours to help them separate materials. So, to mimic these machines you will have to figure out how to separate the materials without using your hands.
3. Your goal is to separate all the glass pebbles from all the other materials in the tub without using your hands. How would you do it?

Tip 1: Use the other items (magnets, string and net) to help you separate the glass from the other products.

Tip 2: Use a large piece of cardboard to fan away light items like paper.

Tip 3: Try using water to make some materials float!



Analysis—what did you find?

You have now done the key activity of separating materials, just like a material recovery facility. I bet that was a lot of work—can you imagine how hard robots or machines have to work to do the same job with tonnes and tonnes of waste material?

For a better understanding of how materials recovery facilities (MRFS) work, check out https://www.youtube.com/watch?v=g_ajkE77Nik&t=37s.