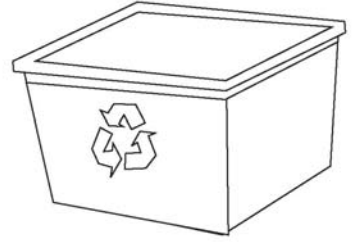


Feed the Bin



Make a MRF: Build Your Own Recycling Factory Grades 4-8

Materials: “Clean trash” items including mixed paper, steel cans, aluminum cans, plastic bottles of different colors; recycling bin, “Tools” to sort recyclables such as a small fan, plastic garden tools, sticky paper lint rollers, magnets, flashlight, snorkel, shallow pan of water, clothespins, etc.

Activity Time: 20 minutes (lesson), 10 minutes (follow-up)

Concepts Taught: Recycling, Sorting/Grouping Objects

Correlations to NCSCOS: **Grade 4:** ELA Objectives 4.02, 4.05; Science 3.01; **Grade 5:** ELA Objective 4.02; Science Objectives 4.06, 4.07; **Grade 6:** ELA Objectives 3.02; Science Objectives 1.02, 1.03, 1.08, 2.01, 2.03, 7.04; **Grade 7:** ELA Objective 3.02; Science Objectives 1.02, 1.03, 1.08, 2.01, 2.03, 6.01, 6.02; **Grade 8:** ELA Objective 3.02; Science Objectives 1.02, 1.03, 1.08, 2.01, 2.03

Objectives:

- Students will simulate a recycling factory by devising and demonstrating methods to sort recyclable materials.
- Students will understand how a real MRF operates.

Background:

- Recycling helps save natural resources such as energy, landfill space, and raw materials and creates jobs.
- A MRF (Materials Recovery Facility) is a specialized plant that receives, separates and prepares recyclable materials for sale to factories that will use the recycled material to make new products.

Lesson:

1. Divide students into groups, each with their own bin of mixed recyclables to sort. Each group of students will be their own “factory.”
2. Each student should choose (or be assigned) one type of recyclable to sort. For example, student 1 will only pick out aluminum cans. Student 2 will only pick out paper.
3. Students are not allowed to simply use their hands to remove items. They **MUST** use one of the “tools” provided, such as using the magnet to remove steel cans, the lint roller to pick up paper, and so on. They may not necessarily use all the tools provided.
4. Allow students 10 minutes to make and test their factory plan.
5. Have each group demonstrate their factory to the rest of the group.
6. Show students how a real MRF might operate:
 - a. A magnet picks out steel cans
 - b. A light shines through the plastic bottle, can detect their color, and signals a fan to blow the green plastics into one pile, clear plastics into another, etc.
 - c. A sticky conveyor belt (lint roller) removes the paper
 - d. Aluminum cans are left. (These are usually removed with an eddy current-a machine that produces a countercurrent of electricity to repel cans out.)

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Independent Follow Up:

Have students create their own invention or factory that will make something useful. Students should draw pictures of their invention and label and describe what it does in a few sentences.