

If Landfill Machines Could Talk . . .



Grade Level: 3 to 5



Developed by Nancy Meagher, Sheffield Elementary School, Turners Falls, MA, and used in Grades 2 to 5

Community Partner: N/A

Overview/Rationale for Lesson:

Children draw landfill machines and imagine trash from their perspective, as a way of understanding where garbage goes and why it is important to recycle.

Learning Objectives:

- Children will complete a detailed drawing of a landfill machine and write what they imagine the machine might tell people about recycling.
- Children will use observation skills to gather detailed information about their machine from photographs and drawings.
- Children will discuss landfills and consider implications and alternatives.

Lesson Plan Procedure

Preparatory Activity:

Time: 10-15 minutes



Step 1. Introduce the project with visual images and verbal descriptions of landfill machines at work. (See “Resources” for link.) 5 minutes.

“When I was ten years old my mother took me to visit a landfill and I loved the big machines. They moved just like dancers. Their bodies are like what humans would like to be: strong and big to move things. If we didn’t have these machines we could never move so much trash.”

Step 2. Use a photograph or diagram to point out the parts of a backhoe and demonstrate with children how machine parts move like human body parts. 5-10 minutes.

Demonstrate the similarity between body parts and machine parts, using a backhoe arm as an example. Teacher points to each part of the excavator arm and moves the corresponding part of her own arm, inviting children to move their bodies along with her as she guides them.

Teacher’s narrative:

- Just like you have a shoulder, the machine has a shoulder (points to picture) where the arm connects to the body... Touch your shoulder. Would you like to move your shoulders? Show me how they move.
- Just like you have an elbow, the machine has an elbow that bends here (points to picture). Would you like to bend your elbow? Show me how it moves.



- Just like you have a wrist, the machine has a smaller part here that connects the arm with the bucket... Would you like to move your wrist?
- Your hand is like the bucket (points to picture) scooping, digging, grabbing.
- Can you move all four parts at once? Shoulder, elbow, wrist, hand?
- What is the brain of the excavator? Children respond, "the driver."

Main Activity:

Time: 20-30 minutes

Step 3. Children choose one landfill machine to draw on large paper with black pencil, using pictures and diagrams as a reference tool. 20-30 minutes.

Give each group of children enlarged black and white photocopies of landfill machines from a book such as *Diggers and Dump Trucks (Eye-Openers)* by Angela Royston. (See "Resources" for link.)

- Make available a few color photographs of landfills and hand lenses so students can look closely at machine parts and trash piles.
- Give each student a piece of paper, pencil and eraser. Children draw a machine, referring as needed to the images close at hand. Teacher encourages children to look closely at details of machine parts. Children may include a driver, trash piles, signs, etc. to complete their picture.

**Conclusion/Follow-Up to Activity:**

Time: From 40 minutes to several class periods (see extensions)

Step 4. Gather students in a circle and tell them to pretend that landfill machines could talk. Teacher guides discussion with prompts and records student responses on chart paper. 10 minutes.

- Teacher prompt: "What do you think landfill machines would say to humans?" Responses (Gr 3) include "This stuff smells! Why am I picking up this stuff? Why don't people recycle? Peeee-ewwww!"
- Teacher prompt: "When you looked closely at the landfill photos with a hand lens, did you see anything that could be recycled or re-used?" Responses include "Ketchup bottle, bags, cardboard..."
- Teacher prompt: "What if tractors were trying to help people solve the problem of too much trash?" Responses (Grs 2/3) include "It's better to recycle than to throw away!"; "Dear humans please recycle so our world is safe but not plastic."

Step 5. Children write on their drawings what they think their landfill machine might say to people about recycling. 10 minutes.

- Teacher models how to make speech balloons coming out of the machine with words written inside.
- Children write text onto their drawings.

Step 6. Children continue to work on their drawings with options to add color and collage. Time: from 20 minutes to 1-2 additional class periods (as time permits)



- Options for revising drawings include: draw black pen over pencil lines to bring out definition; color with crayon, colored pencil, and/or paint; collage scraps of paper for pieces of trash; mount the drawing on colored paper.
- Children show their finished drawing to the class and read the message.



Additional Notes on Lesson Plan:

This project was part of “Recycling Renaissance,” a school-wide recycling theme. Art projects included Red Worms for Composting, Earth Day Hats, Flower Children and Snack Pack Kids. Snack Pack art projects were done in collaboration with local “trashion fashionista” Lou Leelyn. (See “Resources” for link.)



Materials Checklist:

- Photographs of landfill machines at work. (See “Resources” for link.)
- Picture book with building machine photographs such as *Diggers and Dump Trucks*.
- Photocopies of building machine pictures, preferably enlarged
- Paper for drawing
- Pencils and erasers
- Black fine point felt tip pens, crayons, colored pencils and/or paint
- Optional: Colored paper for frames/borders and scraps of paper

Extension(s):

- Exhibit drawings around the school or at a school-wide art show.
- Build three-dimensional landfill machines out of recycled materials.



Developer's Comments on Lesson:

The lesson developer, Nancy Meagher, focuses on recycling to empower children to make a difference. She designs interconnected recycling projects to help children see the bigger picture of where garbage goes and to attract them to alternative solutions like composting food, re-using packaging creatively and recycling.

-- Carol Berner

Useful Links and Downloads are available at http://row.ctriver.org/?page_id=181.

CURRICULUM STANDARDS

SCIENCE (Connections to the Massachusetts Curriculum Frameworks):

Framework: Science and Technology/Engineering

Strand: Technology/Engineering (Grades 3 to 5)

Topic: Engineering Design

2.1: Identify a problem that reflects the need for shelter, storage, or convenience.

2.2: Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

ART (Connections to the Massachusetts Curriculum Frameworks)

Framework: Arts

Strand: Arts Disciplines: Visual Arts

Topic: Elements and Principles of Design

2.2: For line, explore the use of line in 2D and 3D works. Identify a wide variety of types of lines in the environment and in artwork.

Topic: Observation, Abstraction, Invention, and Expression

3.1: Create 2D and 3D artwork from direct observation.

River of Words-CT River is a place-based poetry and art program designed to promote watershed awareness, literacy, and the arts. It is offered in partnership with the Connecticut River Watershed Council and funded, in part, by Mass Humanities and Mass Center for the Book. Find us at <http://row.ctriver.org>