













Landfill Harmonic (Elementary Level)

Enduring Understandings

- Landfills and methods of waste disposal have a significant impact on the environment and communities.
- The lives of students in Cateura were profoundly changed when they were given the opportunity to learn and perform music.
- Music can transform a person, a community, and the world.

Essential Questions

- How did learning to play instruments affect the students of Cateura?
- Can a landfill have a positive effect on the environment and communities?
- How does the film Landfill Harmonic inspire positive action about waste pollution?

Notes to the Teacher

Landfill Harmonic is a film about "The Recycled Orchestra," a group of children from a Paraguayan slum who play instruments made entirely of discarded items salvaged from the landfill that dominates their town. It is a beautiful story about the transformative power of music but it also highlights two vital issues of our times, poverty and waste pollution.

The world generates about a billion tons of garbage a year. Those who live near it and make a living from it are the poor — like the people of Cateura, Paraguay. *Landfill Harmonic* follows the orchestra as it takes its trash-into-music around the world. The movie runs 84 minutes.

In this four-part lesson, students will be analyzing and discussing the film *Landfill Harmonic*, learning about the impacts of landfills on the environment, and comparing their own experiences making found-material instruments with what they saw in the film.

To prepare for this lesson, post a map of South America that shows Paraguay and its capital, Asunción. Cateura is a slum near this city but will probably not appear on the map. Make copies of the handouts for each student. Set up a blank concept map on Kidspiration or https://www.mindmup.com/, or use another web creation tool. Secure access to student computers.

You should also gather a large supply of recycled materials for instrument creation. Suggested materials include plastic containers, unused straws, gallon milk jugs, cardboard boxes, rubber bands, aluminum roasting pans, string, cardboard tubes, and popsicle sticks. Sand, salt, pebbles, birdseed, rice, beans, small beads, large beads, dried pasta, rice, and dried peas are also useful. Paints and markers should be added if you wish to have students decorate their instruments.

JOURNEYS IN FILM: LANDFILL HARMONIC



In the first part of the lesson, after a warm-up discussion on the musical instruments that students are learning to play, the class watches a quick video followed by your modeling how to fill in a graphic organizer. Then students watch *Landfill Harmonic* and complete **Handout 1**, which asks them to reflect on what they like and dislike about the film, pose questions that they still have, and list key words from the film. They discuss their answers, use a mindmap to organize their ideas, and write an "exit ticket" on an index card that summarizes their learning.

Part 2 acquaints students with waste disposal in their own community, something that most of them never consider. Before teaching this part of the lesson, locate a copy of *Where does the Garbage Go?* by Paul Showers or a similar text. Here are some other possibilities:

Follow that Garbage! A Journey to the Landfill by Bridget Heos

Recycle! A Handbook for Kids by Gail Gibbons Why Should I Recycle? by Jen Green This Book Stinks! by Sarah Wassner Flynn

A series of extension activities is located at the end of the Procedures section if you wish to develop this part of the lesson further.

In Part 3 of the lesson, students make their own instruments out of recycled materials. Resources on making instruments from found materials may be found at https://kinderart.com/art-lessons/music/easy-make-musical-instruments/ and http://www.cbc.ca/parents/play/view/activity_musical_instruments. Make several instruments yourself to use as examples This would be an excellent part of the lesson in which to team up with a music teacher.

The fourth part of the lesson asks students to synthesize what they have learned by making a concert tour poster for a hypothetical concert by the Recycled Orchestra in your own town or city. You may wish to have them make the posters with traditional art materials—poster board, paints, markers, clippings from magazines, images downloaded from the Internet, etc. However, it would be more in keeping with the spirit of the lesson if students designed their posters using a computer program such as PowerPoint or Publisher; if you choose this route, you may have to spend some classroom time familiarizing students with how to use the program of your choice.

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COMMON CORE STANDARDS ADDRESSED BY THIS LESSON

CCSS.ELA-LITERACY.RI.5.2

Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.CCSS.ELA-Literacy.W.5.6

With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.

CCSS.ELA-LITERACY.SL.5.1

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.SL.5.1.A

Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

CCSS.ELA-LITERACY.SL.5.1.B

Follow agreed-upon rules for discussions and carry out assigned roles.

CCSS.ELA-LITERACY.SL.5.1.C

Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.

CCSS.ELA-LITERACY.SL.5.1.D

Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

Duration of Lesson

Approximately five 45-minute class periods.

Assessments

Likes-Dislikes organizer on **HANDOUT 1**

Exit card after the discussion of the film

Sequence charts on waste-disposal

Recycling projects from the choice board (optional)

Found object musical instrument

Completed Concert Tour Promoter Poster

Materials needed

Copies of **HANDOUTS 1–3**

Projector for screening video clips and mindmap website

Chart paper or white board for taking notes during class discussions

Index cards

Where does the Garbage Go? by Paul Showers, or other landfill text (See additional text resources in Notes to the Teacher.)

Assorted recycled materials for instruments (See suggestions in Notes to the Teacher.)

HANDOUT 4 for Extension Activity 1 (optional)



Procedure

Part 1: Initial Viewing and Discussion

- 1. Begin the class by asking what instruments students in your class are learning to play. List the instruments on the board and add any instrument that you can play yourself. Group instruments if you wish into categories such as keyboard, wind, percussion, string. Ask what materials the instruments are made from and what musicians must do to take care of their instruments.
- **2.** Explain that students are going to watch a film about a group of young people in Paraguay who form their own orchestra. Point out Paraguay on the classroom map, and then show them where the city of Asunción is.
- 3. Tell students that, as they view the film Landfill Harmonic, they will complete a graphic organizer to record their reflections on the film but first they are going to practice with a two-minute video on two brothers in China who make instruments from vegetables. On the board, draw a table with two rows and two columns; label it the same way the graphic organizer on Handout 1 is labeled. Then show the short video at https://www.youtube.com/watch?v=N7qiwu46hrA. Model the activity by having students suggest answers for the video while you record them on the board.

- **4.** Distribute **HANDOUT 1: WATCHING LANDFILL HARMONIC.**Review the handout with the class so that they understand your expectations. Show the video and have students complete the handout. If you wish, stop the video periodically to give them some time to write.
- **5.** Ask students for their initial reaction to the film. Allow students to talk through their ideas, using the graphic organizer to focus on parts they liked and disliked.
- **6.** Have students present their questions. Record questions on chart paper or a white board. Give students time to think-pair-share their ideas on responses to each classgenerated question.
- 7. Open up a Kidspiration page if you have that program on your computer or use https://www.mindmup.com/ or another concept mapping program to record students' responses to two important questions:
 - **a.** How did the lives of the students change when they began to participate in the orchestra?
 - **b.** What do you think the creators of the documentary want you to know about the Cateura orchestra?

Here is a sample mindmap:



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8. After discussion, have students write an exit ticket, a one-or two-sentence response on an index card about why the orchestra is important. Leave the website up for student reference during this writing activity.

5. Discuss ways to prevent trash from ending up in landfills. Encourage students to talk about ways that they and their families "reduce, re-use, and recycle." Ask them what they know about your school's recycling program. (See the Extension Activity below.)

Part 2: What Happens to the Trash?

- 1. Ask students what happens to the trash that they throw away. Have them explain as far as they can, from the moment they drop something in a trash can at home, to a larger garbage can, garbage truck, and landfill. Students who live in apartments may use a garbage chute to a main collection area on a low floor of the building. (Most students will not understand the complete process or be able to locate the nearest landfill to their homes.)
- **2.** Gather students for a read-aloud circle and read the book *Where does the Garbage Go?* by Paul Showers (or select another text from the suggested resources). Be sure to show pictures and discuss as you go.
- **3.** Distribute **HANDOUT 2: WASTE SEQUENCE CHART**. Have students summarize what happens to trash once it is thrown away.
- 4. Have students view the video clip https://www.youtube.com/watch?v=18FLfQDInI8 and record the problems with landfills. Discuss the problems caused by methane gas. (You might want to point out that this is a British video, so pronunciation of "methane" is different from the U.S.) Also have students consider the problems with toxic leachate. If you wish, you could supplement with the video at https://www.youtube.com/watch?v=lsyg472MQp8.

Part 3: Instruments from Found Materials

- 1. Ask students to recall some of the materials that were used to make the instruments in Cateura. (Oil drums, shoe heels, forks, recycled wood). Explain that today students will be creating their own instruments from recycled materials.
- **2.** Allow students time to sort through materials and experiment with using them to make sounds before committing to an instrument design. Provide some examples of instruments to inspire students. (See suggested websites mentioned in Notes to the Teacher.)
- **3.** Once students have created instruments, give volunteers a chance to perform for the class.
- **4.** Lead a discussion about the challenges students had when planning and building their instruments. How does this change their view of the students of Cateura and their instruments?



Part 4: Posters for a Concert

- **1.** Ask students if they would like to see the Recycled Orchestra live in concert. Why or why not? How might it benefit the community if a concert were held near the school?
- **2.** Divide students into small groups of 3 5 students. Distribute **HANDOUT 3: LANDFILL HARMONIC TOUR POSTER** and explain directions. If you wish, you can designate roles or have students choose among themselves who will be group leader, writer, artist, and concert promoter; however, remind them that every student in the group is responsible for contributing ideas.
- **3.** Give students time to discuss the details of the concert and plan the approach they will take in designing the poster. They may wish to use the "Liked" section of **HANDOUT 1** for inspiration and to integrate some of the key words that they identified on the handout into the poster text.
- **4.** When you feel students are ready, distribute poster boards and art materials for the assignment if you are making paper posters. If you are choosing to have students design the posters online, move to their computers and, if necessary, instruct them how to use the program you have chosen. Allow them time to work in small groups on the assignment.

- **5.** When the posters are completed, hang the paper posters or project the computer-designed posters. Have each student group explain the decisions they made to the class. If you hang the posters on the wall, allow students to take a "gallery walk" to view each poster close up.
- **6.** Conclude the lesson by writing the word "Transformation" on the board. Ask students for a definition. (A profound change). Have students explain who or what was transformed by the events portrayed in *Landfill Harmonic*.

Extension Activities

1. You may wish to create a choice board to encourage recycling at your school if it is nonexistent or inefficient. (See Handout 4: Recycling Choice Board.) Students may choose to craft an email to the principal (or whichever administrator handles school recycling) with ideas on what the school should do to increase recycling and decrease waste. They also may choose to create an informational poster to hang in the hallways about the importance of recycling. The final choice is to create a Prezi or PowerPoint presentation for another class that explains the problems with landfills and encourages the students to recycle. When completed, have students share their projects with the intended audience.

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- 2. Have students explore the Kids' Science Challenge Zero-Waste site and play the interactive game. Have them brainstorm their own ideas for creating a package that doesn't end up in a landfill. See http://www.kidsciencechallenge.com/year-four/zw.php
- **3.** How-to-Writing: Have students write a detailed, step-by-step how-to guide for creating a found-material instrument.
- **4.** Have students research Freshkills Park in New York City, a park being built on what was the largest landfill in the world. See https://www.nycgovparks.org/park-features/freshkills-park.
- **5.** Watch how a violin is made and compare it with how instruments were constructed in Cateura. https://www.youtube.com/watch?time_continue=4&v=WcJfbjcUDoo

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Watching Landfill Harmonic

Name			
Directions:			
As you watch Landfill Harmonic, fill in the organizer below with your thoughts about the film.			
What I liked	What I didn't like		
Questions I have	Important words		
Questions I nave	Important words		



Handout 2 Waste Sequence Chart

Name		
What happens to your trash after you throw it awa	ay? Describe each step.	
)	



Handout 3 - P.1 Landfill Harmonic Tour Poster

Name	
Crown March are	
Group Members	

Directions:

With your group, design a poster to promote a concert of the Recycled Orchestra at your school. As tour promoters, you want to encourage people to come to the concert. Be sure to tell them why they will enjoy the music. Your poster should also explain why the orchestra is important to the environment and people of Cateura. Design your poster so that people will want to buy tickets and support the Recycled Orchestra.

Include each of these items in your poster. Check them off as you work on your poster:

Items for Inclusion	Brainstorming Ideas	✓
A headline and design to draw attention to your poster		



Handout 3 - P.2 Landfill Harmonic Tour Poster

Items for Inclusion	Brainstorming Ideas	✓
The benefits of supporting the orchestra		
Reasons why the orchestra helps its members, the community, and/or the world		
Specific information about buying tickets including date, time, price, and place		



Handout 4 Recycling Choice Board

Name	

Choose one activity to demonstrate your understanding of the importance of recycling and reducing landfill waste.

Option 1: Write an Email	Option 2: Make a Poster	Option 3: Create a Prezi or PowerPoint Presentation
Write an email to the principal. Explain to him/her why our school should be concerned about reducing waste. Give two or three suggestions for how our school can reduce the trash we send to the landfill and increase school recycling.	Create a poster that will hang in the hallway for other students to see. Your poster should list three reasons it is important to recycle and give students two or three tips on how to decrease the trash they make.	Create a Prezi or PowerPoint to present to another class in our school. Teach students the problems with landfills and explain the reasons we should recycle waste. Include two or three suggestions for students to decrease their own trash.



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