World View Fellows: *OVERBook* Project on the Environment and Sustainability: Study Guide

Title: *TALKIN' TRASH: Perception, Pollution, and Action-Taking!*

Study Guide Theme: Pollution

Featured Photos:


"Sorting Garbage"


"Seal in Net"


"Darkening Skies"


"Man Bathing"

Source: Butler, T. (2015). *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff Books.

Overview:
Students learn about where trash goes when we throw it away, and the impact that various forms of pollution have on the environment, how the world might be different with less pollution, and action steps they can take to make a difference. Students will actively participate in a trash sorting activity, then revisit photographs from the *OVERBook* to consider how the pictures might be different if pollution were significantly diminished.
(90 minutes; can be divided into two 45 minute sessions)

Grade level(s): 3-5

Subject(s): Social Studies, ELA

Corresponding National Standards: Social Sciences/Geography Standards, ELA Standards

English Language Arts

- **SL: Speaking and Listening**
  - SL.1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
    - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led)
    - Ask questions to check understanding of information presented, stay on topic, and link comments to the remarks of others.
    - Review the ideas expressed and explain understanding in light of the discussion.

Geography and Social Studies

NSS-G.K-12.5 ENVIRONMENT AND SOCIETY

- Understand how human actions modify the physical environment.
- Understand how physical systems affect human systems.

- Understand the changes that occur in the meaning, use, distribution, and importance of resources.

Geography and Environmental Literacy

- Understand the earth's patterns by using the 5 themes of geography: (location, place, human-environment interaction, movement and regions).
- Exemplify how people adapt to, change and protect the environment to meet their needs.

Corresponding Global Competency Skills: (https://asiasociety.org/education/what-global-competence)
Investigate the World, Recognize Perspectives, Communicate Ideas, Take Action

Essential Question(s) (include 1-3):
What is pollution?
What impact does pollution have on the environment?
What steps can I take to prevent pollution?

Specific Strategies and Activities:

Photo Analysis and Introduction (30 minutes)

Advance prep: Four pieces of large anchor chart paper will be placed in different areas of the room, titled in large lettering as follows: "Looking for Treasure in the River," "Ocean Obstacle Course," "Farmland Clouds," "Taking a Bath." (Note: These phrases are alternant titles for the OverBook photo names shown above.) Each title will also be written on an index card. The teacher will print each photograph onto card stock paper, cut the photos into several pieces and laminate the pieces. The number of pieces can be modified based on the grade level and the fine motor/cognition skills of the students. Sticky notes and pencils or pens will be placed on each table. Tables will be color-coded by taping a different colored index card or piece of paper to the side of each table. Puzzles will be placed aside and one puzzle will be given to each of four student groups later in the lesson.

The teacher will introduce the lesson by asking students to define "perception." The teacher will explain that it is fine to take a chance and guess if they don't know the answer. The teacher will take verbal answers from the students. If no one is able to give the correct definition of "perception" the teacher will explain that it simply means the way we see, or understand, something—this is often shaped by background knowledge/environment. In order to pique interest and enhance engagement the teacher will say, "Your perception is about to be changed." If time allows, the students may share a time when something wasn't exactly what it seemed; i.e., how their perception was changed or challenged.

The teacher will explain that the first portion of this lesson will involve individual brainstorming and the second portion will require that the students work together with their table group. The teacher will then divide the class into four random groups according to the color on each table by pointing to teach student, naming a color and directing the student to go have a seat at the table with the corresponding color.

Once the students are seated, the teacher will point out the anchor charts to the students and read the titles, "Looking for Treasure in the River," "Ocean Obstacle Course," "Farmland Clouds," "Taking a Bath." The teacher will then place one of the titled index cards on each table and direct students to each take one sticky note and a pencil and write what comes to mind when they think of the phrase on their table, allowing two minutes for students to write their responses (this activity can be differentiated by allowing students to draw pictures instead of words).

After the two-minute time limit the teacher will direct the students to place their sticky notes on the corresponding anchor chart. For example, a student at the table group that received the "Looking for Treasure in the River" title card might write, "I love to find smooth, shiny rocks in the mountain stream near my home," or draw a picture of a girl splashing in river water; she would place that note on the "Looking for Treasure in the River" anchor chart.

Students will return to their original table group and the teacher will rotate the title cards so that each table group received a different title card. The above process will be repeated. To extend the time of the lesson all four cards can be cycle through each table group, however for 45-60 minute lessons time will likely allow for only two iterations of this activity.

After students have placed their sticky notes on the anchor charts, the teacher will read allow several of the sticky notes on each anchor chart. The teacher will place a bag containing a picture puzzle (see "Advance Prep" above) and instruct students to open the bag and solve their puzzles collaboratively. This activity can be differentiated for high-level learners or upper grades by combing the pieces of the various pictures and placing them randomly on the tables then encouraging the groups to work together to determine which pieces go together, and then fit the puzzle pieces together.

Once all table groups have completed their puzzles, the teacher will ask each group to share which anchor chart title corresponds to their photograph. The teacher will then direct students to line up and conduct a "Picture Walk" around each table so that all students will have the opportunity to view each photograph. If the lesson is not going to be used again, the teacher could have the students tape the puzzle pieces together and attach the photograph to the anchor chart.

Discussion Questions (15 minutes)

When the Picture Walk is completed, the teacher will gather the class as a whole (not in the table groups) to lead a discussion with the following questions:

- Was your perception changed? How? (various answers)
- Were the pictures different than what you thought they would be? Why? (various answers)
- What is the common theme in these pictures? (pollution)
- What types of pollution are there? (water, air, chemical, garbage, etc.)
- Who does pollution affect? (everyone)
- When you throw something away where does it go? (various answers)

The lesson will conclude with the teacher asking students what they can do to prevent pollution.

Specific Student Activities (40 minutes)

Note: Can be started on the same day, or another day.

The teacher will ask students: "When you throw something away, do you know where it goes?" The teacher will take student responses, and explain the transfer station/landfill situation for the local community, emphasizing that trash and pollution isn't just a concern in "other places," but a local very real consideration for all communities. The teacher will share a picture of the local landfill, if available.

The teacher will explain that there are ways to prevent so many items from going in the landfill, such as refusing single-use items such as drinking straws and Styrofoam containers, and recycling and composting. The teacher will ask students to tell what they know about recycling and composting. Most students will have some working knowledge of recycling, but might need some guidance on composting. Therefore, the teacher will explain that some items can avoid the landfill because they are compostable. For example: fruit and vegetable scraps can be put in a bin and returned to the earth, thereby not taking up space in the landfill. The teacher will show students items and bins brought in (see examples listed in "Materials" section.

The teacher will lead the following activity:

If an item goes in the trash students will hold their nose, wave their other hand and say, "**Landfill!**" in a nasally voice.

If an item will recycle students move their hands around in a circular motion, sway back and forth, and chant, "**Recycle, Recycle, Recycle!**"

If an item is compost-worthy students open both hands, palms down, and chant, "**Compost, Compost, Compost!**"

The teacher will drop each item in the appropriate bin as students do the chanting.

The teacher will show the photographs from the "Photo Analysis" portion of the lesson and ask: "How might these pictures look different if the pollution was removed?" The teacher will allow for brief discussion. Using paper and colored pencils, the students will pick one topic of the four and illustrate how it "should" look. As time allows, students will explain their drawings, and will place their art work with the corresponding anchor chart.

Conclusion (5 minutes):

The teacher will prompt students to share ideas on ways that they can positively impact their environment. Students will observe how a community in Paraguay, South America made something beautiful and wonderful from trash. The teacher will show the 3 ½ minute video clip on the Landfill Harmonic. Following the video, the teacher will instruct students to "turn and talk" to a peer about something that was particularly impactful. Students will be challenged to find at least one way to re-purpose a "trash" item.

Text Connections and Extension Activities:

Invite an employee of the local landfill or local government rep come speak to the students about trash management systems.

Read ***The Curious Garden*** by Peter Brown and have students create their own "before" and "after" pictures of an area in their neighborhood that they would like to transform.

With teacher guidance, students can create a "re-purposed" item, a shopping bag made from an old t-shirt that will prevent one-time-use bags from going in the landfill. See instructions in the "Materials" section.

Students may work independently or in groups to create "Trash Monsters" from items in the trash or recycling bins. See attached Rubric for assessment.

Encourage the students to develop an "Action Plan" centering around how they can diminish the impact of pollution.

Materials:

- Hard copies of the featured photos
- Sticky notes and anchor chart paper
- Pencils/colored pencils
- Trash can, recycle bin, compost bin (this can simply be a bowl if a compost bin is not available)
- Various items for sorting in to trash, recycling and compost such as: glass jar, plastic jug, paper, apple, banana peel, plastic wrap, food containers, etc.
- Optional: "Trash to Treasure Self-Assessment" Rubric
- ***The Curious Garden*** by Peter Brown (if doing the extension activity)
- Helpful weblinks (others may be discovered by typing the topic into the search engine of choice as suggested in

the body of the lesson):

- Landfill Harmonic Orchestra trailer: https://www.youtube.com/watch?v=UJrSUHK9Luw&t=20s
- How to make a t-shirt bag: https://www.youtube.com/watch?v=zgpaM3u2zng
- Plastic Ocean Project, Inc.: http://www.plasticoceanproject.org/
- How Long Does it Take Garbage to Decompose (The Balance): https://www.thebalancesmb.com/howlong-does-it-take-garbage-to-decompose-2878033

Bibliography:

Images

Abd, R. (2015). *Sorting Garbage*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2011, October 19)

(Guatemala) Sorting Garbage: To eke out a living… In this Oct. 19, 2011 photo, people search for scrap metal in contaminated water at the bottom of one of the biggest trash dumps in the city, known as "The Mine," in Guatemala City.

Hawkes, J. (2015). *Darkening Skies*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2007, January 9)

(UK) Darkening Skies: Air pollution, CO2 and water vapor rise from the stacks at a coal-burning power plant in the U.K. Aerial view of Drax Power Station, North Yorkshire, United Kingdom.

Pitt, M. (2015). *Seal in Net.* In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2001, May)

(Hawaii) Seal in Net: Hawaiian monk seal caught in fishing tackle off Kure Atoll, Pacific Ocean. The seal was subsequently freed and released by the photographer.

Sharma, P. (2015). *Man Bathing*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2011, June 10)

(India) Man Bathing: A larger percentage of the global population… A man bathes from a broken water pipe line in a Noida slum, located in the northern Indian state of Uttar Pradesh.

Books

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Kroll, S., & Cox, S. (2012). *Stuff! reduce, reuse, recycle*. New York: Marshall Cavendish Children.

Lawrence, E. (2015). *Garbage galore*. NY, NY: Bearport Publishing.

Patterson, E., & Colombo, A. (2014). *Michael Recycle meets Litterbug Doug*. San Diego, CA: Worthwhile Books.

Peet, B. (1996). *The wump world*. New York: Scholastic.

Rabe, T., Gerardi, J., & Moroney, C. (2015). *How to help the Earth-by the Lorax*. New York: Random House.

Seuss. (2018). *The Lorax*. London: HarperCollins Childrens Books.

Winter, J., & Ganser, L. J. (2010). *Here comes the garbage barge!*New York: Schwartz & Wade Books.

TRASH-TO-TREASURE SELF-ASSESSMENT

Student's Name: _____

Name of Newly-Created Treasure: _____

Skills and Scoring	3	2	1	Score
Product: Creativity	My treasure is highly creative and unique- it doesn't look like anyone else's.	My treasure is somewhat creative and unique.	My treasure could have been more creative.	
Product: Use of Materials	My treasure contains 5 or more items saved from the trash.	My treasure contains 3-4 items saved from the trash.	My treasure contains 1-2 items saved from the trash.	
Product: Use of Time and Participation	I spent my time wisely, focusing on the project and following all classroom expectations.	I mostly spent my time wisely and followed some classroom expectations.	I could have used my time more wisely, and better managed my choices.	
Presentation: Ideas	My presentation was full of interesting, descriptive details about my product.	My presentation contained some interesting and descriptive details about my product.	I could have presented more interesting and descriptive details about my product.	
Presentation: Performance	I spoke confidently and clearly at an understandable pace.	I spoke somewhat clearly and at a mostly understandable pace.	I could have spoken more clearly and better paced my words.	

Total Score: _____

13-15: TOTAL TREASURE! **9-12: POTENTIAL TREASURE** **5-8: TREASURE-IN-TRAINING**

My Comments:

Lee Ann Smith created this material, 2018

This study guide was created by Lee Ann Smith, Glen Arden Elementary as part of the 2018 World View Fellows Program:
The OVERBook Project on the Environment and Sustainability
For more information about the program, please visit http://worldview.unc.edu/