

Title: *FOOTPRINTS-- BIG, SMALL and GONE: Lessening Environmental Impact by Reducing Reusing, Recycling and Refusing.*

Study Guide Theme: Consumption

Featured Photos:



“Smokestacks and Garbage”



“Garbage Cows”



“Trash Wave”



“Container City”

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

Overview:

Students will work together in groups to analyze the above photographs, then come together to present their findings to the whole class. The teacher will lead the class in a discussion of where items go when thrown away, and what over-consumption means for the environment. The “Refuse” component of the conservation cycle will be introduced. Students will share their background knowledge using a “Footprint” worksheet in which they give examples of small and large footprint actions, and specific examples of how to lessen their own footprints. (90 minutes; can be divided into two 45 minute sessions)

Grade level(s): 3-5

Subject(s): Social Sciences, ELA

Corresponding National Standards: [Social Sciences/Geography Standards](#), [ELA Standards](#)

English Language Arts

SL: Speaking and Listening

- Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
- Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly in complete sentences at an understandable pace.
- Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; adjust speech as appropriate to formal and informal discourse.

Science

Ecosystems

- Understand the effects of environmental changes, adaptations and behaviors that enable animals (including

- humans) to survive in changing habitats.
- Explain how humans can adapt their behavior to live in changing habitats (e.g., recycling wastes, establishing rain gardens, planting trees and shrubs to prevent flooding and erosion).

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.
- Exemplify the interactions of various peoples, places and cultures in terms of adaptation and modification of the environment.

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 impact does over-consumption have on the environment?

What are the four R's in the Conservation Cycle?

What are some alternatives to single-use items and how can I lessen my carbon footprint?

Specific Strategies and Activities by Grade Level:

Photo Analysis and Introduction (30 minutes)

The teacher will introduce the lesson by revealing that the students will become “**photo detectives**” for this lesson.

The teacher will explain that the class will be divided into four groups and each given a box of materials containing magnifying glasses, a notepad, pens and a container of questions (see “Materials” section) which they will use to analyze a photo which is also in the box. The teacher will show the items in the box and explain that the students’ task is pick 2-3 questions (they can either close their eyes and draw the questions, or read all the questions first and pick 2-3 that they would most like to answer), write the answer on the notepad and then present the findings to the whole class.

The teacher will divide the students into four random groups. Each group will need at least one scribe, and one presenter. Students will be instructed to share the magnifying glasses. In order to differentiate for special learning needs, the teacher may encourage the group to decide whether to allow multiple students to share the tasks of scribe and presenter and/or assign these jobs.

Each group will be given a detective box and told they have 10 minutes to analyze the photo. Allow groups to move to various areas of the classroom so that they can discuss their thoughts and findings.

After 10 minutes, the groups will come back together as a class and each group will present the photo that they analyzed and offer their findings. The students may hold up their hard copy of the photo to show to the others in the class, but the teacher may find it advantageous to project a digital image of the photograph while the group is presenting, or place it under a document camera so that a bigger image is revealed. Each group will be allowed five minutes to present on their photograph, including a Q&A.

Discussion Questions (15 minutes)

Once all four groups have presented their findings and the boxes have been returned, the teacher will lead the class in the following discussion questions:

- What do these photographs have in common?
- Did these photographs offer us any clues about human behavior?
- What does consumption mean?
- What does it mean to over-consume, and how does that impact our world?
- What does it mean to have, or leave, a large footprint? A small footprint? (Discuss literal and figurative terminology)
- What can we do, as a citizen of the world and in regards to consumption, that will help the earth?

The teacher will encourage students to “turn and talk” to share with their peers at least one way that they can lessen their consumption.

Specific Student Activities (45 minutes)

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

The teacher will explain that footprints will be discussed today. Not the type of print we make when we step in mud, but rather something called a carbon footprint which simply means the amount of trash each of us leaves in the world.

The teacher will show examples of one-time use items (i.e., drinking straws, plastic bags, carry-out containers, plastic water bottles, etc.) and show reusable items (i.e. cloth shopping bags, metal water bottles, glass jars, etc.) The teacher will explain that when we make a “big” carbon footprint we are creating more trash than we need to; a “small” carbon footprint indicates that we are making wiser choices about how we care for the earth. As the teacher holds up the various items he/she can ask the students to identify whether the item creates a small or big footprint. Students may be prompted to speculate on how long they think it takes each item to decompose.

A Decomposition Rates website (found by using a search engine of choice) will be shown to students, encouraging them to discuss why some items take so long to decompose and what type of impact these items have on the environment when thrown away. Students are very surprised to learn that a disposable diaper takes 450 years to decompose!

Students will complete the FRONT page only of the “Footprint” assessment sheet (attached) using pencils or colored pencils. Once students have completed the front page of the “Footprint” sheet, the teacher will show photographs from the “Photo Analysis” portion of the lesson and ask: “Why might it be important to ban plastic items, particularly one-time use plastics?” The teacher will allow for brief discussion.

The teacher will point out that most of us know the phrase, “Reduce, Reuse, Recycle” but there is another very important R: REFUSE. Discuss how these photographs might look different if more people refused one-time use items. Ask students to turn and talk about how they could politely refuse one-time use items.

The teacher can show a simple, age-appropriate video on “What is a carbon footprint?” that can be found by typing the phrase into the search engine of choice.

In conclusion, the teacher will ask: “Do our choices have an impact?” allowing for brief discussion. Students will complete the BACK of the “Footprint” worksheet, and share their work.

Action Items

- Students will be assigned the task of bringing in an actual item that they can and will reuse time and again to replace a previously one-time-use item.

- Students will be challenged to REFUSE at least one single-use item during the week, and write about their experience.

Text Connections and Extension Activities

Read *Here Comes the Garbage Barge* by Jonah Winter (based on a true story). Use online or physical maps to locate the route of the garbage barge. Discuss the ethics, politics and social implications surrounding efforts of one group of people to convince others to take their trash.

If desired, the teacher can show an age-appropriate and current news link on the impact of plastic trash (found by using a search engine of choice).

The teacher may opt to search web resources for topics such as “How Our Garbage Travels to Distant Shores” and “Top Ten Reasons to Ban Plastic Bags,” and share with students to prompt further discussion.

Encourage the students to develop an “Action Plan” centering around how they can get further involved in impacting consumption habits in a positive way.

Materials:

- Hard copies of the featured photos
- Four Detective Boxes: Shoe boxes containing magnifying glasses, notepad, pens and a container with question strips (attached). One photograph should be placed in each Detective Box.
- Pencils/colored pencils
- Examples of one-time use items (straws, take-out containers, plastic grocery bags, etc.)
- The attached “Footprint” worksheet
- *Here Comes the Garbage Barge* by Jonah Winter (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):
 - Overshoot’s Footprint calculator: <https://www.footprintnetwork.org/resources/footprint-calculator/>
 - Plastic Ocean Project, Inc.: <http://www.plasticoceanproject.org/>
 - “How Our Throwaway Culture is Turning Paradise into a Graveyard (CNN): <http://www.cnn.com/interactive/2016/12/world/midway-plastic-island/>
 - How Long Does it Take Garbage to Decompose (The Balance): <https://www.thebalancesmb.com/how-long-does-it-take-garbage-to-decompose-2878033>

Bibliography

Images

Hasan, M. R. (2015). *Smokestacks and Garbage*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2011, April 20).

(Bangladesh) Smokestacks and Garbage: Brick kilns dot a dystopian... Dhaka is extremely overpopulated capital city of Bangladesh. Because of drought, famine, water salinity around the country encouraged mass migration to Dhaka. In reality, the city itself lost its capacity to accommodate more people. Brick kilns are taking places into green spaces and growing more high rising buildings everywhere around city. The main river Buriganges in the city is nearly dead because of huge industrial pollution.

Noyle, Z. (2015). *Trash Wave*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2013).

(Indonesia) Trash Wave: Indonesia surfer... Surfing trash island: photographer captures startling images of

garbage-strewn waves in Indonesia. Indonesian surf champion Dede Suryana rides a wave filled with trash on Untung Jawa Island.

Stanmeyer, J. (2015). *Container City*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Original photograph date not given).

(Singapore) Container City: Shipping containers, indispensable tool of the globalized consumer economy, reflect the skyline in Singapore, one of the world's busiest ports.

Van Zuydam, S. (2015). *Garbage Cows*. In *Overdevelopment, Overpopulation, Overshoot*. San Francisco, CA: Goff. (Originally photographed 2010, December 7).

(Ivory Coast) Garbage Cows: Watched over by a billboard depicting former President Ghagbo, cows graze on garbage in Abidjan, Ivory Coast. Animals eat in front of a placard of Ivory Cost President Laurent Gbagbo in the city of Abidjan, Ivory Coast.

Books

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Gray, L. M., & Rowland, J. (1998). *Miss Tizzy*. New York: Alladin Paperbacks.

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Kooser, T., & Root, B. (2010). *Bag in the wind*. Somerville, Mass: Candlewick Press.

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

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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.

QUESTIONS FOR DETECTIVE BOXES

(to be cut apart and placed in another container inside the Detective Box)

How would you describe the setting of the photograph?	Study the people: How are they dressed? What are they doing?
What is the relationship among the people (strangers, friends, enemies, etc.)	How would you describe the photographer's purpose and/or point of view?
What are some details you noticed within this photograph?	What and/or who is the subject of this photograph?
What does the photograph reveal about its subject?	When and where do you think this photograph was taken? How can you tell?

Name: _____ Date: _____



EXAMPLE OF A BIG FOOTPRINT (draw or write):



EXAMPLE OF A SMALL FOOTPRINT (draw or write):

PUT ONE FOOT ON THE BACK OF THIS PAPER AND TRACE YOUR SHOE.

INSIDE THE OUTLINE WRITE THREE WAYS THAT YOU CAN SHRINK YOUR FOOTPRINT

(Lee Ann Smith created this material, 2018)