

Picture This

Grades: 5

State Standards: Grade 5: Science; Investigation and Experimentation 7, Scientific progress is made by asking meaningful questions and conducting careful investigations. Students should develop their own questions and perform investigations.

Preparation Time: 25 minutes

Activity Time: 1 hour minutes

Key Words: Landfill management, litter fencing, petroleum, landfill transportation and disposal.

OBJECTIVE

Students will be describing changes in public attitudes toward recycling, reuse and new sanitary landfills compared to old style landfills. Scientific thinking process includes observing, communicating, ordering, and classifying. Students will learn single use items can be reused by turning an old material into a reusable shopping or grocery bag.

MATERIALS

A week before the project, ask the student to bring in a sturdy, clean, throw away T-shirt, pillow case or sheet for the project. Scissors and colored markers.

BACKGROUND

The production of plastic bags requires petroleum and often natural gas, both non-renewable resources that increase our dependency on foreign suppliers. Additionally, prospecting and drilling for these resources contributes to the destruction of fragile habitats and ecosystems around the world. According to the United States International Trade Commission, in 2008 Americans used more than 102 trillion imported and domestically produced bags. Each year the United States consumes 10 billion paper grocery bags, requiring 14 million trees.

On 23 December 2002, the Environment Protection and Heritage Council agreed to a package of measures to reduce the environmental impact of plastic bags and asked that specific proposals be developed for national action, including ways of reducing the impact of plastic bags as litter. The Best Practice Guidelines for Plastic Bag Litter Management have been developed as a small part of the overall response to the plastic bag litter issues. High consumption rates of plastic bags have led to increased inappropriate disposal of bags. Plastic bag litter can negatively impact the community's perception of and use of public areas.

See <http://www.nt.gov.au/nreta/environment/waste/guidelines/pdf/landfilllitter.pdf>

The Great Pacific Garbage Patch has mistakenly been referred to as the largest landfill in the world, a floating island, and a trash vortex. According to the Algalita Marine Research Foundation, the Great Pacific Garbage Patch is most accurately represented as a "plastic soup" where the plastic is distributed throughout the water column

State law requires stores to set up at-store recycling programs to provide customers with drop-off recycling service for grocery and merchandise bags.

At least 267 different species are known to have suffered from entanglement or ingestion of marine debris including seabirds, turtles, seals, sea lions, whales and fish. The scale of contamination of the marine environment by plastic debris is vast. It is found floating in all the world's oceans, everywhere from polar region to the equator.

See www.chicobag.com

California State Law requires stores to set up in-store plastic bag recycling programs to provide customers the ability to drop off their used plastic grocery and merchandise bags.

PROCEDURE

1. Introduce the lesson with this quote, “A picture is worth a thousand words.” Ask students to explain why they think this quote is correct or incorrect.
2. Distribute the Photo Analysis Guide and explain each of the steps.
3. Once students are familiar with the Guide, use it to examine one of the photographs included with this activity.
4. Looking at Photo 1, have students individually answer the questions posed in the first three steps of the Guide. Have the students write their responses on a sheet of paper. Once the students have completed steps one through three for Photo 1, have them share their responses with the rest of the class.
5. Provide students with the background information about the photo and then briefly discuss student’s discoveries. Ask the students the following discussion questions:
 - What management techniques were depicted in the photograph? Does the photo show a problem?
 - How have the attitudes of people toward recycling and reuse changed over the past century?
 - How have advances in technology helped make decisions related to landfill management?
6. Ask the groups each to complete Step 4 of the Guide and then share their responses with the class.
7. Following the discussion, have students complete Step 5 of the Guide. This conclusion phase will allow students to examine the ways in which the background information has influenced their thinking about the photograph.
8. Divide the class into small groups and distribute one or more of the remaining photographs to each group. Repeat this process for each photograph to be analyzed.

Evaluation/Discussion

Have students sort the pictures into categories and justify their choices.

Example:

- Old attitudes versus recent attitudes
- Low technology versus high technology
- New management versus old management techniques

Extension:

Turning old fabrics into a reusable shopping or grocery bag is a simple, clever craft to help everyone be "green." It's a Good Thing that will help protect the environment.

1. Use reusable bags, Keep bags in your car so they are always available.
2. Say No Thank You. Every item purchased does not require a bag. Just tell the clerk "no thank you" and carry your small or individual purchases by hand.
3. Reuse or repurpose your plastic bags when you can. These bags have many great uses, such as liners for small wastebaskets or for cleaning a cat litter box.
4. Recycle your bags. Just return them to your local grocery or drug store.
5. Tell a friend. Get others to use reusable bags and to recycle.
6. Learn to wrap using the Otsukai Tsutsumi



First fold the corner furthest away from you over the top of the article towards you, then fold the corner closest to you over the article away from you.

Fold the corners from either side up towards the middle, twist and tie in a knot.

ASSESSMENT

A public that is well educated about current landfill management practices in CA will be able to make educated and informed decisions. Students should have an understanding of single use items, recycling, reuse, and responsible landfill management.

Photo Analysis Guide

Step 1. First Impression

What is your first reaction to the photograph? What images or feelings does this photo bring to mind?

Step 2. Collecting Data

Make a list of things you see in the photograph.

Step 3. Inferences

What theories or educated guesses do you have about this photograph? What is happening outside of the photo?

Step 4. Perspectives

Who is affected by the photo taken? Would anyone object to this photo?

Step 5. Conclusions

What insights about the past have you gained from analyzing and discussing this photograph? How did the background information change your understanding of the photograph? What changes in landfill management techniques did you note?

Photograph 1.



Appropriate litter control strategies with mobile litter screens for excessive plastic bags.

Photograph 2.



Effective litter screens catching plastic bags. Perimeter fences and on-site litter screens should be constructed so as to retain litter onsite even during strong and variable wind conditions.

Photograph 3.



Los Angeles California 2008 after a rainstorm washed trash from the streets down the storm drains and into the ocean.

Photograph 4.



Ineffective litter screens, bags have blown offsite. Landfill operators should incorporate into their maintenance work program regular retrieval of litter that has escaped the site.

Photograph 5.



Plastic bags loaded onto a conveyer entering a plastic bag recycling machine.