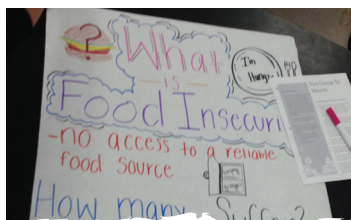




Education Campaign



WASTE REDUCTION AND RECYCLING

Project Guide

Waste Reduction and Recycling



Generation Earth Program

Generation Earth is a Los Angeles County Public Works environmental education program presented by TreePeople. Our goal is to educate and empower teens in Los Angeles County to be an active part of the solution to environmental concerns in their community. We offer do-it-yourself environmental projects that help youth make a positive difference at school, at home and out in the world. Our programs are built to support the needs of teachers, students, schools and community youth groups.

Generation Earth Project Guides

Generation Earth Project guides are designed to assist students in the completion of an environmental project. These guides provide the instructions, tools and support materials needed to complete and learn about important environmental projects that will positively impact the community.

What is Waste Reduction?

There is no such thing as throwing an item “away.” It must go somewhere. Being disposed into landfills with our massive amounts of trash are recyclable materials and other reusable resources. The U.S. EPA reported a 32.1 percent recycling rate in 2018.¹ That figure could be higher if instead of landfilling “trash” we could recycle and reuse these materials.

Waste reduction is more than recycling. It involves minimizing the use of packaging that is not reusable or recyclable. This results in money saved and resources conserved.

Waste in Los Angeles

Waste is a vital issue in Los Angeles County. Each of us generates an average of five pounds of waste per day. This may not sound like much, but when multiplied over a period of a year, the amount of waste each person creates is staggering.² Waste is generally transported to one of ten solid waste landfills around Los Angeles County. It costs money to dispose of it and valuable open space is used to create landfills to store waste.

Reduce, Reuse, Recycle and Rethink

The four R's of waste reduction are reduce, reuse, recycle and rethink. The most impactful is to reduce the amount of materials used. The second is to reuse the material we already have. The third is recycle material back into the cycle of production and consumption. Recycling takes resources to haul, clean and reproduce a product. Not only do the three R's reduce pollution and landfill waste, they also save energy used in the sourcing of virgin materials, transportation of materials and production of materials to goods. When fewer virgin materials are used to produce new goods, more resources are available for a longer period. The last R is to rethink and make better choices by incorporating the first three R's into your daily lives. Often, items that are no longer needed by one person, may be still useful to someone else. Donate to a second-hand thrift store or list items through media platforms to share with the community are viable solutions.

Education Campaign Project Guide

An education campaign is a great way to inform and address waste issues to a specific audience. This guide will help your group raise awareness about waste through an educational campaign.



The Steps

1. Check This Out

Explore the subject of waste by working in teams to learn a specific topic related to waste reduction and share what is learned through the creation of infographics.

2. Pre-Survey

Prior to designing the education campaign it is important to survey members of your audience to find out what they already know or don't know, to provide them with new information. This will help to guide your messaging.

3. Campaign Strategy

Guidelines are provided on how to create messaging and ideas for a campaign strategy.

4. Post-Survey

A couple of weeks after the education campaign efforts, conduct the survey again to help determine whether the audience remembers seeing the communications, as well as the specific content about waste communicated through the campaign.

5. Evaluation

Complete the project by answering questions that serve to evaluate the process and offer next steps for potentially taking on additional waste reducing projects.

CHECK THIS OUT

Explore the subject of waste by working in teams to learn a specific topic related to waste reduction and share what is learned through the creation of an infographic.

Procedure

1. Divide into six working groups. Groups should be as close to equal in size as possible.
2. Pass out a different topic sheet to each group.
3. Each group has 15 minutes to:
 - Learn and discuss the topic
 - Use poster paper and markers to create an infographic answering the questions listed on the topic sheet
4. Each group shares and explains their infographic with the class.
5. As a class, discuss the need for waste reduction, at home, school and in the community and how this information is important to share.

Materials

- Topic Sheets (pages 5 through 9)
- Poster paper or dry erase board – one per group
- Markers – one set per group



Piles of Paper

Start Here!

You're doing your homework and make a mistake in the first paragraph. So, you crumple the piece of paper and toss it in the trash. Did you think about the tree that the paper came from?

Create an Infographic that answers the following questions:

- How are paper products created?
- Why is it an issue?
- How much of this paper is wasted in Los Angeles County?
- What is something that can be done on campus to reduce paper waste?



- Trees are harvested and sent to mills to be processed into lumber. The wood waste is sent to paper mills where it is manufactured into lunch bags, notebooks, paper, magazines, napkins, towels, etc.
- Making paper from raw materials (trees) requires large amounts of water and energy. Paper manufacturing uses more water per ton than any other product in the world,³ and is the third largest industrial consumer of energy.⁴
- The average American uses seven trees and 680 pounds of paper per year.⁵ Paper and paperboard make up 23.05 percent of waste generated.⁶
- Paper made from waste paper is called “post-consumer” recycled paper because it has been used and recycled instead of being landfilled. New paper made from recycled paper instead of trees creates 35% less water pollution and 74% less air pollution and 75% less energy is used.⁷
- To reduce the amount of paper going to landfills, find sustainable alternatives such as using a reusable canvas bag, cloth napkins, purchasing post-consumer products, buying items in bulk to reduce packaging waste or collect paper products for recycling.

The Problem with Plastic

Start Here!

Today, plastics are used for almost everything from milk jugs and soda bottles to bicycle helmets and auto parts.

Create an Infographic that answers the following questions:

- How are plastic products created?
- Why is it an issue?
- What is the problem with plastic waste?
- What is something that can be done to reduce plastic waste?



- Plastics are made from oil, a non-renewable natural resource limited in supply.
- Manufacturing plastic requires large quantities of water and energy resources. Plastic manufacturing also produces harmful chemicals that if not properly treated may pollute our water and air systems.
- Ninety-one percent of all plastic is not recycled.⁸ In Los Angeles alone, ten metric tons of plastic fragments (bags, straws and soda bottles) are carried into the Pacific Ocean every day.⁹
- Plastics are only designed to break down into smaller pieces when exposed to sunlight; therefore, they generally do not decompose when disposed of in landfills.¹⁰
- Purchasing products with less packaging minimizes plastic from becoming litter on the streets and into the ocean. Marine animals sometimes mistaken six-pack rings, plastic bags and other plastic items floating in the ocean as food.
- By recycling plastic, it can be used to make other plastic products such as water bottles and food containers into t-shirts. By collecting these products for recycling and then buying new products made from recycled goods, we are fully participating in the recycling process.

Pollution Going Down the Drain

Start Here!

Street gutters are more important than you may realize. They drain water off the streets through catch basins and storm drains. These openings lead to flood control channels that, in turn, carry the water directly to the ocean. Water picks up debris as it travels through streets and into the ocean.

Create an Infographic that answers the following questions:

- What is urban runoff?
- Why is it an issue?
- How is motor oil part of the issue?
- What is something that can be done to reduce the effect of urban runoff?



- In urban environments, most rainfall hits our streets and runs across pavement, through gutters and into storm drains. This water is called urban runoff.
- Storm drains help prevent flooding by carrying large volumes of urban runoff through concrete flood channels to the ocean. This water is carried directly to the ocean without treatment.
- Urban runoff is a significant source of ocean pollution. Litter, dog waste, cigarette butts, fast food packaging, plastic shopping bags, pesticides, leaking motor oil – anything on the ground – can end up in the ocean.
- Used oil is a major source of oil contamination of waterways and can result in pollution of drinking water sources. In fact, one oil change can contaminate one million gallons of fresh water.¹¹
- Eliminating the use of harmful pesticides and fertilizers on plants, recycling motor oil and picking up trash are ways to prevent polluted urban runoff from reaching the ocean.

There is No “Away”

Start Here!

When our items are tossed into the garbage, they are sent to a landfill. A landfill is a carefully engineered structure, designed to be the final option for disposing waste.

Create an Infographic that answers the following questions:

- What is leachate?
- Why is it an issue?
- Why is methane an issue?
- What can be done to reduce the items that are landfilled?



- Landfills are lined on the bottom and sides with thick layers of plastic and clay. As garbage is dumped, it is covered with layers of soil, foam, plastic or crushed glass to prevent litter and water, soil and air pollution. This also prevents trash from breaking down by minimizing oxygen and moisture levels inside.
- Leachate is the toxic fluid that is formed in landfills when moisture from rain mixes with plastics, chemicals and other hazardous wastes. This poisonous liquid trickles down to the bottom where it is pumped out and treated. If the plastic liner should fail or be punctured, the leachate could leak into the soil and underground water system, creating a health risk.
- When tiny bacteria break down food, paper, clothing, wood, yard waste or pet waste, gasses are produced and escape into the air. Most of this gas is methane, a greenhouse gas that is 84 times more potent than carbon dioxide.¹² Landfills are the third largest source of man-made greenhouse gas emissions.
- Recycling is one way to reduce the amount of waste going to landfills. Household hazardous waste collection events also help by ensuring this waste is disposed of properly.

Don't Trash the Neighborhood

Start Here!

Have you ever taken a walk in your neighborhood and saw abandoned furniture, tires, appliances or other unwanted items dumped in alleys, vacant lots and other open spaces? Dumping these items is unsafe and illegal! People caught illegally dumping trash or unwanted items may be subject to a \$10,000 fine and six months in jail.¹³

Create an Infographic that answers the following questions:

- What is illegal dumping?
- Why is it an issue?
- Why is E-waste an issue?
- What is something that can be done to prevent illegal dumping?



- Properly disposing of large items requires disposal fees to a recycling facility or landfill. It is illegal for residents, contractors and waste haulers to leave their stuff everywhere.
- Los Angeles County and local cities spend millions of tax dollars to clean up trash and unwanted items illegally dumped.
- Illegally dumped trash and unwanted items attract insects and rodents creating health and safety concerns. Rodents spread diseases, chew through wiring and harm the environment and human health.
- Televisions, computers and other electronic waste (e-waste) have cathode ray tubes, which contain lead. E-waste items are hazardous to the environment and should be properly recycled or disposed of by a certified hazardous waste hauler.
- People caught dumping illegally can be fined up to \$10,000 and/or jailed for six months. Report illegal dumping by calling local law enforcement agencies.
- Periodic neighborhood cleanup projects may discourage illegal dumping. It is believed that illegal dumping is less likely to happen in clean, watched neighborhoods than in areas that continuously have large volumes of trash in streets, sidewalks and alleys.

Recycling Means Business

Start Here!

Most of the trash generated every day is a disposable item made from materials that can be pulped, melted, or mixed again into a new item. Facilities were made to process these types of waste into new items.

Create an Infographic that answers the following questions:

- What is a MRF?
- What happens to our recycled materials?
- What is the issue now?
- What is something that can be done to keep recyclables out of the landfill or burned?



- Materials Recovery Facilities (MRF) are the recycling factories items go to when picked up curbside for a recycling program. High-tech machinery is used to identify and sort out materials. The extra is bundled into a “bale” of high-quality material that is then sold to manufacturers to create new materials such as shoes, bags and new plastic products.
- These large compressed bales are loaded into shipping containers and sent to other countries around the world. In 2016, the United States exported almost 700,000 tons a year to China alone. Overall, China imported 7 million tons from around the world.¹⁵
- In January of 2018, China put a ban on almost all imports – banning shipments of recyclables that have a contamination level of .05 percent or higher. Since recycling bins are almost always contaminated, this means that 99 percent of the recyclable materials we used to sell to China is no longer being recycled. If no alternative is found, these materials will be sent to the landfill and/or incinerators.
- It is critical that we decrease our dependence on single-use plastics and other recyclable products. Reducing the use of single-use plastics such as straws, plastic bottles and other disposable goods, reduces the risk of recyclables ending up in landfills.

PRE/POST SURVEY

It is important to survey members of your audience to find out what they already know or don't know, to provide them with new information. This will help to guide your messaging.

A couple of weeks after the education campaign efforts, conduct the survey again to help determine whether the audience remembers seeing the communications, as well as the specific content about waste communicated through the campaign.

Procedure

1. Determine your audience.
 - Who are you trying to educate? Students, teachers, or the larger community?
2. Decide where and when you will conduct the survey.
 - Choose a time that has a large group to randomly choose from such as during lunch or at a sports event.
3. Decide who will conduct the surveys.
 - Surveys will be conducted in person.
 - Several people can be conducting surveys at the same time.
 - Make copies of the survey and place them on clip boards to make filling out the survey easier. Or, use a digital device to record answers.
4. Conduct the surveys.
 - Approach and ask a random portion of your audience to take the survey.
 - Be sure each person asks the questions in the same way.
 - The more surveys taken, the more accurate the information will reflect the knowledge of the whole.
5. Analyze the results.
 - Add up the responses and look for any common answers that reflect how much is known about paper and plastic waste and illegal dumping.
 - Use this information to help guide the messaging for the educational campaign. See page 13.
6. After the education campaign conduct the survey again.
7. Analyze the results.
 - Look to see if the answers reflect the messaging and education provided, compared to the first survey.

Materials

- Survey sheet (page 12)
- Digital devices (optional)
- Pens and clipboards (optional)

Waste Survey

Ask survey participants the following questions and write responses below.

1. Where does garbage go when it is thrown “away”?

2. What materials are recyclable?

3. What happens to litter that is left on the ground?

CAMPAIGN STRATEGY

Once the pre-survey is complete, use what was learned to help create messaging and an educational strategy to inform your audience about waste. Assign tasks and deadlines for the educational campaign. Consider the following:

Create messaging

- Based on the answers to the survey questions, you should have a better understanding of the specific knowledge gaps the audience has about waste.
- Choose three to five facts or messages.
- Agree on what you want your audience to learn.
- Keep it simple and clear.

Be creative

- Use the infographics created as inspiration for visuals.
- Think about different ways to convey your message, such as through music, art and video.

Determine how you want to communicate

Some ideas include:

- Create posters or other signage.
 - Display them where there's a large majority of your audience.
- Create public service announcements and/or articles.
 - School PTA newsletters
 - Local newspapers
 - Radio stations
- Post on social media.
 - Online blogs
 - Facebook
 - Twitter
 - Instagram
- Talk about waste on campus.
 - Ask school administrator for permission and help in getting the word out.
 - Make classroom announcements.

Posters

- Create posters that are appealing to your audience.
- Present information in a way that it is easily understandable.
- Information should be as concise as possible.
- Include appropriate graphics and/or photos.
- Try to avoid too much text or "busy" layouts.

EVALUATION

Once the Education Campaign is complete, answer the following questions to evaluate how it went and introduce some possible next steps.

QUESTIONS

1. What were the most successful parts of the campaign?
2. What were the least successful?
3. What might we do differently next time?
4. Was the audience interested in possibly having a waste-related event in the future?

What's Next?

Another Project Guide

Are you interested in another related project? Consider:

- E-Waste Collection
- Textile Recycling
- Community Swap

Share!

Generation Earth would love photos and/or videos of the campaign!

- Send them to generationearth@treepeople.org.

REFERENCES

1. epa.gov/sites/production/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf
2. dpw.lacounty.gov/epd/rethinkla/recycle/recycle-what-is.aspx
3. fair.org/extra/pulp-facts/
4. energy.gov/eere/amo/forest-products-industry-profile
5. recycling-revolution.com/recycling-facts.html
6. epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials
7. epa.gov/sites/production/files/2015-09/documents/changng_wste_stream.pdf
8. forbes.com/sites/trevornace/2017/07/26/million-plastic-bottles-minute-91-not-recycled/?sh=2b0c78fe292c
9. earthsoceans.foundation
10. science.howstuffworks.com/science-vs-myth/everyday-myths/how-long-does-it-take-for-plastics-to-biodegrade.htm
11. epa.gov/recycle/managing-reusing-and-recycling-used-oil
12. unece.org/challenge#
13. dpw.lacounty.gov/epd/illdump/penalty.cfm
14. npr.org/sections/goatsandsoda/2019/03/13/702501726/

