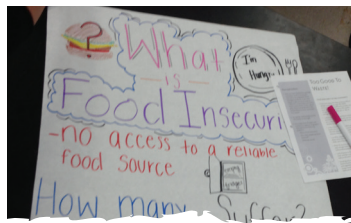




# Education Campaign



## WASTE REDUCTION & RECYCLING Project Guide

# Waste Reduction & Recycling



## Generation Earth Program

Generation Earth is a Los Angeles County Department of 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 learn about the subject, and take the steps to completion of a project that positively impacts the community.

## What is Waste Reduction?

There is no such thing as throwing an item “away.” It all must go somewhere. Being disposed into landfills with our massive amounts of trash are recyclable materials and other reusable resources. The U.S. EPA estimates that 75% of what we throw away is actually recyclable.<sup>1</sup> Instead of landfilling “trash” we could be recycling and reusing these materials as much as possible.

Waste reduction is more than recycling. It also involves stopping waste where it starts by using less items with a lot of packaging, or that are not reusable or recyclable in the first place. The end result is money saved, resources conserved.

## Waste in Los Angeles

Waste is a vital issue in Los Angeles County. Every day, each person disposes of approximately 5.0 pounds of trash. Together, the 10 million residents, businesses and manufacturers in L.A. County send 9.36 million tons of trash to the landfill every year.<sup>2</sup> We generate enough trash to fill the Rose Bowl in just 4 days! These resources are generally transported to one of 10 solid waste landfills around Los Angeles County. What does that mean for you? It costs money to dispose of all this waste, valuable open space is used to create landfills to store the waste, and waste pollutes the environment.

## Reduce, Reuse, Recycle

The 3 R's of waste reduction are reduce, reuse, and recycle. The most impactful is to reduce the amount of materials used. The second is to reuse the materials we already have as they are, and lastly, recycle material back into the cycle of production and consumption. Recycling comes last because it takes resources to haul, clean and reproduce a product. Not only do the 3 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 of time. Often times, items that are no longer needed by one person, may still have a use by someone else. Instead of throwing items in the trash or leaving them on the curb to possibly pollute the neighborhood, donating to a second hand thrift store, listing items through online classifieds or exchange platforms, or sharing with the community, are viable solutions.

## Education Campaign Project Guide

An education campaign is a great way to inform a specific audience about the issues related to waste, and ways people can address these issues. This Guide will help your group raise awareness about waste through an education 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 rest of 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 - 9)
- Poster paper or dry erase board – 1 per group
- Markers – 1 set per group



# Piles of Paper

## Start Here!

Score! Two points! 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 and processed into lumber. The wood waste is sent on to paper mills, where it is manufactured into lunch bags, notebooks, paper, magazines, napkins, towels, and the list goes on and on.
- Making paper from raw materials (trees) requires large amounts of water and energy. Pulp and paper manufacturing uses more water to produce a ton of a product than any other industry,<sup>3</sup> and is the third largest industrial consumer of energy worldwide.<sup>4</sup> It takes 390 gallons of oil to produce one ton of paper.
- The average American uses seven trees and 680 pounds of paper per year.<sup>5</sup> Paper products make up about one third of the total waste being produced in the United States.<sup>6</sup>
- Paper made from waste paper is called “post-consumer” recycled paper because it has been used and recycled instead of being landfilled. New white paper made from recycled paper instead of trees creates 35% less water pollution and 74% less air pollution, and 75% less energy is used.<sup>7</sup>
- To reduce the amount of paper going to landfills, the first step is to find sustainable alternatives to paper products such as using a reusable canvas bag instead of paper, using cloth napkins instead of paper, purchasing post-consumer products or buying items in bulk to reduce packaging waste. Lastly, collect paper products for recycling.

# The Problem with Plastic

## Start Here!

When your grandparents were growing up, plastics weren't a big part of their lives. Today, plastics are used for 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.
- 69% of plastic bottles don't get recycled.<sup>8</sup> In Los Angeles, 10 metric tons of plastic, from bags, to bottles and straws are carried to the Pacific Ocean every day.<sup>9</sup>
- Plastics do not easily decompose. Even those designed to degrade break down into smaller pieces when exposed to sunlight; therefore, they generally do not decompose when disposed of in landfills.<sup>10</sup>
- Purchasing products with less packaging prevents plastic from becoming litter on the streets and in the ocean. Marine animals sometimes mistake 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 cloth shopping bags and 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!

The rectangular openings or “catch basins” at the end of your street are more important than you may realize. Street gutters 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. With it goes everything that the water picks up 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 urban 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 washed into gutters and carried to the ocean.
- One gallon of used motor oil, poured into the gutter or dripping from a car, can potentially contaminate up to one million gallons of ocean water.<sup>11</sup> In 2010, 120 million gallons of motor oil were sold in California. Approximately 69% of the oil was recycled, with the remaining oil being improperly disposed of down storm drains, into lakes and streams, or thrown in the garbage.<sup>12</sup>
- Eliminating the use of harmful pesticides and fertilizers on plants that will be washed into the street, recycling motor oil, and picking up trash are just some of the ways to prevent polluted urban runoff from reaching the ocean.

# There is No “Away”

## Start Here!

When we throw things “away”, they don’t vanish into thin air. 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?



- Built like a tomb, it is 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, as well as 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 it 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.
- Another issue is methane. 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 21 times more potent than carbon dioxide.<sup>13</sup> Landfills are the third largest source of man-made greenhouse gas emissions.
- Reducing the amount of items that go to a landfill reduces the risks associated with them. This includes recycling, composting, and collecting household hazardous waste for proper disposal.



# Don't Trash the Neighborhood

## Start Here!

Ever take a walk in your neighborhood and see abandoned furniture, tires, appliances or other unwanted items dumped in alleys, vacant lots, and other open spaces? Dumping these items is not only ugly; it's unsafe and illegal! People caught illegally dumping trash or unwanted items may be subject to a \$10,000 fine and six months in jail.<sup>14</sup>

## 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 the payment of disposal fees to a recycling facility or landfill. Some residents, contractors and waste haulers leave their stuff where ever they want rather than pay these fees. This is illegal.
- Los Angeles County and local cities spend millions of tax dollars to clean up trash and unwanted items left in alleys and streets.
- Illegally dumped trash and unwanted items can attract insects and rodents creating health and safety concerns. Rodents can spread disease, chew through wiring, and otherwise 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 waste to the environment. E-waste should be donated, properly recycled or disposed of by a certified hazardous waste hauler.
- People caught dumping illegally can be fined up to \$10,000 and jailed for six months. However, it is often difficult for local law enforcement agents to catch these criminals. Citizens who want to help prevent illegal dumping can call law enforcement agencies and report these offenses.
- 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 in alleys.

# Recycling Means Business

## Start Here!

Since most of the trash the average person generates every day is a disposable item made from materials that can be pulped, melted, or mixed again into a new item, thus put back into the cycle of use or “recycled”, facilities to process these types of waste were created.

### Create an Infographic that answers the following questions:

- What is a MRF?
- How do they work?
- What can be an issue?
- What is something that can be done to support MRFs?



- Materials Recovery Facilities, or MRF's for short, are the recycling factories our items go to when they are picked up as part of a curbside recycling program. They use high-tech machinery to identify and sort out materials so that they can be bundled into a “bale” of high-quality material that is sold to manufacturers to create new materials.
- In a MRF, a waste sorting line uses technology like magnets, optical sorting computers that “see” types of material, tumblers that sift them out by weight and shape, compressed air that blows materials off the line, and vacuums that suck up plastic film. Some even remove labels!
- This technology continues to improve allowing for more items to be recovered. For example, a machine was created for milk cartons and juice boxes. It melts off the plastic coating, separates the paper from aluminum foil layers inside, recovering all three materials. Now, over 50% of Americans have access to a MRF that uses this machine.<sup>15</sup>
- The use of technology helps in the sorting and recovery process. However, when materials are dirty and non-recyclable items are included, it contaminates the system.
- Rinsing food and liquids from recyclables, and ensuring only recyclable items are included means more efficiency for the MRF's and cheaper service fees to the public.

# PRE/POST 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.

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 to see 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.
  - Follow the same guidelines above.
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 & 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 3 - 5 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 newsletter
  - Local newspapers
  - Radio stations
- Post on social media.
  - Online blogs
  - Facebook
  - Tweets
  - Instagram
- Hold an event with speakers to talk about waste on campus.
  - Ask school administration for permission and help in getting the word out.
  - Make lunchtime or 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

### Battle of the Schools

Consider competing in the Generation Earth Battle of the Schools competition.

- Talk to Generation Earth for more information.

## Share!

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

- Send them to [GenerationEarth@treepeople.org](mailto:GenerationEarth@treepeople.org).



# REFERENCES

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