GENERATION EARTH

WATER POLLUTION PREVENTION

Project Toolkit

Water Pollution Prevention

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 youth in the County of Los Angeles to be an active part of the solution to environmental concerns in their community. We offer do-it-yourself environmental projects that help youths 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 Toolkits

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

The Hydrologic Cycle

The hydrologic cycle begins when rainwater from clouds falls onto the earth during a storm. The rain water then percolates down into the soil and rock or becomes stormwater runoff. The soil and rock acts as natural filters cleaning the water that collects in aquifers (underground layers of rock that store percolated water). This underground water is called ground water and supplies water to wells and natural springs that we can tap into for consumption. When it rains, water that did not percolate into the ground travels over land as stormwater runoff, flowing downhill and collecting in streams and rivers which then outlet into lakes and oceans. Evaporation occurs when the sun heats surface water such as in the lakes, rivers and oceans creating and drawing tiny water vapors into the atmosphere to form rain clouds, thus completing the hydrologic cycle.

The Urban Environment

As communities grow, more land is developed creating miles of impervious surfaces (hardscape such as streets and parking lots where water cannot percolate), buildings and houses. Since rain water cannot percolate into the ground, there is more runoff at the surface level which increases the risk of a flood. To prevent floods, engineers created a floods control system. The flood control system consists of catch basins, large underground pipes and open channels designed to quickly convey runoff straight to lakes or ocean. Although the flood control system is necessary to prevent flooding, it interrupts the natural hydrologic cycle by reducing the opportunity for percolation. Without this natural system of percolation and filtration, runoff reaches the lakes and ocean directly, and carrying with it any pollutants it may have picked up along the way.

The School Campus

The school campus may generate urban runoff that ends up at the ocean. The land area of the school directs water from rain, sprinklers, faucets and garden hoses from the campus and into the storm drain system. As the runoff makes its way to a storm drain, trash and other pollutants are picked up and carried into the storm drain system, negatively impacting the environment beyond the campus. Students, teachers, administrators, and maintenance staff are responsible for what flows off the campus, into the storm drains and to the ocean.

The Effects of Drought and Stormwater as a Resource

Now more than ever conserving water and preventing stormwater runoff is important. Stormwater is runoff that is generated by the rain or melted snow as opposed to runoff caused by humans. Due to a historic drought, California's water supplies continue to be severely depleted. Taking steps to reduce potable water use – indoor and outdoor – and percolating stormwater runoff into the ground and not into streets helps to increase local water supply, decrease the need for imported water, and reduce stormwater pollution.

Water Pollution Prevention Project Toolkit

This toolkit explores the water pollution potential on a typical school campus or in the community – where water flows and what it picks up. This exploration will help your group reduce the source of pollution by learning about the issue, auditing the site, and choosing from a variety of options to reduce water waste and pollution on campus and in the community, including a trash cleanup event.

The Steps!

1. Check This Out

Students explore the subject of water pollution by working in teams to learn a specific topic related to water and share what they have learned through the creation of an infographic.

2. Water Audit

Using a map of the site, students indicate where there are specific water-related elements. They continue the process by showing the direction water takes and identifying any areas of concern. Finally, students conduct an interview with the Facilities/Plant Manager to learn more.

3. Choose a Project

Using the water audits and interview information, students work as a group to determine what they would like to achieve by asking specific questions that lead to project suggestions. This either leads them to the Resource section for specific project guidelines or to conduct a Campus/Community Cleanup Event.

4. Campus/Community Cleanup Event

Using a Cleanup Preparation Checklist and Cleanup Event Timeline, students take the first steps needed to plan and run a cleanup event.

- **Promotion Plan**: Guidelines are provided to promote the event.
- **Cleanup Event Team**: Suggested roles are provided.
- **Event Day Set-up**: A list of the different stations is provided.
- **Event Day Management**: Helpful hints for managing before, during, and after the event.

5. Evaluation

Students answer questions that serve to evaluate the process and offer next steps for potentially taking on additional water pollution prevention projects.

6. Resources

Resources are provided for additional support.

CHECK THIS OUT

Students explore the subject of water pollution by working in teams to learn a specific topic related to water and share what they have learned through the creation of an infographic.

Procedure

1. Divide students into four 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 water pollution prevention, 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

Moving Water

Start Here!

In thinking about the County of Los Angeles, it is hard to believe that there are seven major watersheds in our County – five of which are located near metropolitan Los Angeles. These land areas collect and drain water runoff into a common body of water. For most of these watersheds that waterbody is the Pacific Ocean. As water moves through the urban watershed, it picks up everything in its path!

Create an Infographic that answers the following questions:

- What is a watershed?
- How does water move through a watershed?
- Why can this be an issue?
- What is something that can be done to support a healthy watershed?

- A watershed is the land area that "sheds" water to a drainage system or river. It helps supply us with water by feeding underground aquifers or channeling water into rivers and other waterways. Gravity moves water through the watershed from higher to lower areas. Every land is part of some watershed – including your campus and your neighborhood.
- A watershed functions best when the land area is more pervious allowing water to percolate into the aquifer. As rain falls on to land, it percolates through the soil and is filtered of pollutants before it reaches the water table below where it is stored. These underground spaces are called aquifers.
- A watershed's headwater begins at the mountains and foothills; flows across the valley floor and eventually into a body of water (lakes and ocean). In the County of Los Angeles, the Antelope Valley Watershed flows into dry lakes. Other watersheds are the Santa Clara River, Los Angeles River, San Gabriel River, Ballona Creek, Santa Monica Bay and Dominguez Channel watersheds which outlet into the Pacific Ocean.
- When the land becomes developed and less pervious, rainfall is less able to percolate into the ground, disrupting the natural infiltration of water. Water moves across the hardened landscape and is channeled into streets and gutters, then enters into the catch basin and into the storm drain picking up litter and other pollutants along the way.
- Supporting a healthy watershed by minimizing impervious areas when possible, placing mulch (ground up branches/ wood chips) on bare ground to help absorb and allow water to percolate into the ground, and picking up litter are important actions to take.

Open the Flood Gates

Start Here!

Many of the waterways in Los Angeles County have been covered in concrete to provide for flood protection during major storm events. Now connected to city streets by gutters, catch basins, and storm drains, this flood control system provides a quick and direct path for everything draining from our city straight to the ocean.

Create an Infographic that answers the following questions:

- What is the typical climate of Los Angeles?
- Historically, why is that an issue?
- What is channelization and how does it affect water health?
- What is something that can be done to prevent water pollution?

Los Angeles River Bridge B&W by Downtowngal

- The County of Los Angeles is part of the Mediterranean climate zone of California meaning that our climate is subject to short wet winters and long dry summers. This includes occasional heavy rains over short periods of time. When this happens, moderate flooding with severe damage may occur.[1]
- Historically, the flood event in 1938 saw over 10 inches of rain over 5 days, leaving a third of Los Angeles flooded and caused 115 deaths. This, and after smaller yet still devastating floods in 1914 and 1934 resulted in the decision to channelize the river. [2]
- Channelization is the process of engineering waterways to provide for flood control and improved drainage. For the Los Angeles River, channelization began in 1938 and when completed in 1960, formed a fifty-one mile engineered channel mostly lined with concrete.[3]
- Today, the entire Los Angeles County Flood Control District encompasses more than 3,000 square miles and 85 cities. It includes a drainage system in every watershed, including 500 miles of open channel, 2,800 miles of underground storm drain, and an estimated 80,000 catch basins.[4]
- These drainage systems were designed to move water swiftly and efficiently through the watershed. Unfortunately, it also carries litter, debris, and other pollutants that may adversely affect water quality.
- Reducing pollutants or picking up trash are some of the ways to prevent pollutants from entering and flowing through the flood control channels and reaching the lakes and ocean.

Pollution Going Down the Drain

Start Here!

The rectangular openings or "catch basins" located between the curbs and gutters of your street are more important than you may realize. Street gutters help carry runoff into the 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 stormwater?
- What is the difference between stormwater and wastewater?
- Why is stormwater 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 rain falls onto impervious surfaces and runs across pavement, through gutters, enters the catch basins and into the storm drains. This water is called stormwater.
- Storm drains help prevent urban flooding by moving large volumes of stormwater to flood control channels and into the ocean. Urban runoff from sources of water, such as over watering of lawn, is carried directly to the ocean.
- Unlike wastewater, which is from inside use such as toilets, sinks, and showers and is carried out by underground sewer pipes that go directly to a wastewater treatment plant, stormwater is not treated before being sent out to the ocean
- Urban runoff is a significant source of ocean pollution. Litter, pet waste, cigarette butts, fast food packaging, plastic shopping bags, 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. About 115 million gallons of motor oil are sold in California each year. Of that, about half is collected and recycled. That means the rest may wind up in our waste and water streams, or burned off and polluting our air.[5]
- 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.

The Source of the Issue

Start Here!

Not all pollution is the same! Different types of pollution are regulated by the Environmental Protection Agency in different ways through the Clean Water Act. Identifying the type of pollutants and their source, helps government agencies address the pollutants impacts on our environment.

Create an Infographic that answers the following questions:

- How is water pollution categorized?
- What is nonpoint source pollution?
- What is a TMDL?
- What is something that can be done to prevent nonpoint source pollution?

- Water pollution is categorized by where it originates or its "source." It is either "point source" or "nonpoint source".
- Point source pollution is discharged from a single, identifiable source such as pipes, factories, or ships.
- Nonpoint source pollution is caused by rainfall moving over the ground as runoff picking up pollutants and depositing them into rivers or other bodies of water.[6] Pollutants can include fertilizers, insecticides, car oil, pet waste, bacteria, and trash.
- When these pollutants enter water bodies such as our lakes and ocean, whether it is point or non-point, it becomes a huge issue. As a result, the State of California established TMDLs (Total Maximum Daily Loads) which are scientifically established maximum amount of a particular pollutant that a specific body of water can receive and still meet water quality standards. For example, the Los Angeles River can only have a certain amount of metals in it and still meet the TMDL.
- Eliminating the use of harmful pesticides and fertilizers on plants that may be washed into the street, recycling motor oil, and picking up trash are just some of the ways to prevent these pollutants from entering waterways.

Every Drop Counts

Start Here!

The average person in California uses 196 gallons of water per day. More significantly, up to 70% of that water is used outdoors for watering plants and lawns. Los Angeles County residents can make a huge difference in protecting our valuable water resources by taking steps to reduce water usage and ensuring that every drop counts!

Create an Infographic that answers the following questions:

- Historically where did most of the water for Los Angeles come from?
- Where does it come from now?
- Why is importing water a problem during a drought?
- What can be done locally to conserve water?

- The El Pueblo de Los Angeles was founded in 1781. During this time the Pueblo relied almost exclusively on the Los Angeles River for its water. In the early years water from the river was channeled through a distribution system of dams, water wheels and ditches.[7]
- Local water supply such as ground water was not enough to satisfy the demand for water as the population grew, creating a need to import water from other sources. In 1913 the City of Los Angeles completed construction of the first Los Angeles Aqueduct.[8] The Aqueduct diverted water from the Owens River in the eastern Sierra Nevada Mountains. This has grown to include waters from the Colorado River and the Sacramento-San Joaquin River Delta.
- Due to recent historic droughts, California's water supplies continue to be severely depleted with record low snowpack in the Sierra Nevada Mountains, decreased water levels in most of California's reservoirs, reduced flows in the state's rivers and shrinking supplies in underground aquifers.[9]
- Capturing rainwater in rain barrels can provide water for gardens and reduce the need to use imported water and ground water.
- Allowing rainwater to infiltrate into the ground, such as through rain gardens, mulching and directing roof downspouts into gardens, helps to recharge groundwater, replenishing local water supplies and decrease the need for imported water and ground water.

WATER AUDIT

Using a map of the site, students indicate where there are specific water-related elements on campus. They continue the process by showing the direction water takes and identifying any areas of concern. Finally, students conduct an interview with the Facilities/Plant Manager to learn more.

Procedure

1. Plan to divide into working groups when mapping and auditing the site.
2. Create a map of the site doing the following:
   - Use an existing map, removing any unnecessary information.
   - Download a map of the site from on-line.
   - Create your own map using a large sheet of paper.
3. Make sure each group has a map, Water Audit Guidelines sheet, and specific colored pencils or markers.
4. Have students follow the instructions to locate specific water-related elements and mark them on the map. Then, continue the process by using arrows to show the direction water takes and identifying any areas of concern.
5. Familiarize students with the areas they are observing and demonstrate how to gather the data, if necessary.
6. Back in the classroom, have groups report on their findings.
7. Create a combined map of all that was found, representing the site as a whole.
8. Have students conduct an interview with the campus Facilities/Plant Manager using the Interview Questionnaire.

Materials

- Water Audit Guidelines (page 11)
- Colored Pencils/Markers (red, blue, green, purple, black) - 1 per group
- Map of site
- Interview Questionnaire (page 12)

Helpful Hints

- Break the site maps into different parts of the campus for each group.
- If possible, plan to conduct the audit during a rainy day, when irrigation is being used, or suggest using buckets of water to see and understand the flow of water across the site.

Water Audit Guidelines

Walk around the entire assigned area looking for the items listed below and mark them on the map:

LOOK FOR:

- Places where water can get into the ground (grass, bare dirt, garden, etc.)

  Use GREEN to show these places on your map

- Sources of water (faucets, drinking fountains, sprinkler, hose, etc.)

  Use BLUE to show these places on your map

- Places where water travels (gutters, down spout, drain, etc.)

  Use PURPLE to show these places on your map

- Trash and other things that could be harmful to water (food, trash, oil, etc.)

  Use a RED X to show these items on your map

ALSO INDICATE:

- The direction water would travel. Use arrows to show the direction. Remember, water flows from higher points to low ones.
- Leaky water faucets or sprinklers.
- Where you found a lot of trash and other areas of concern.
- What type of trash was found and a possible source for where it came from.

Interview Questionnaire

Name(s) **Date**

Facilities / Plant Manager

1. Is there a need for any waste or pollution management or awareness on campus?
   - If yes, What is needed?

2. Are there fertilizers currently being used to maintain the grass or other planted areas?
   - If yes, What products are used?

     Are they made with toxic chemicals that are potentially harmful to local water?

     Are you willing to use non-toxic options?

3. Are sprinklers used to water the grass or other planted areas?
   - If yes, Does the water spray out onto concrete and /or asphalt?
   - If yes, Would you be willing to adjust or switch out the sprinkler heads?

4. If there are any identified sprinkler, faucet or other water leaks would you be willing to have them fixed?

CHOOSE A PROJECT

Using the water audits, maps, and interview answers, determine with the group what they would like to achieve at their site by asking specific questions that lead to project suggestions.

Procedure

1. Share with the class that they can help prevent water pollution, conserve water, and raise awareness on their campus through a variety of projects to choose from. They include:
   - Campus/Community Cleanup Event
   - Storm Drain Stenciling
   - Mulching
   - Installing a Downspout Extension
   - Adjusting sprinklers
   - Beach Clean-up
2. Explain to the group that choosing the right project requires using what was learned from the water audit and interview to answer questions. Use the Project Selection sheet to answer specific questions.
3. Once complete, work with the students to go through all the "YES" answers and options to determine a project.

Materials

- Water Audits and maps
- Interview answers
- Project Selection sheet (pages 14 - 15)

Helpful Hints

Review the Project Selection sheet ahead of time to understand how it works.

Project Selection

STEP 1

Using the completed map:

- Look at areas indicated by **GREEN**

Could these areas use mulch to help slow the flow of water and allow it to seep into the ground?

NO ☐ YES ☐

Go to the Resource Section for mulching options

- Look at sources of water indicated by **BLUE**

Are there leaks that need to be fixed?

NO ☐ YES ☐

Work with the Plant Manager and offer to assist and learn how to fix leaks

- Look at places indicated by **PURPLE**

Are there drains and/or gutters filled with trash?

NO ☐ YES ☐

Use this Project Toolkit to run a cleanup event

Do any of these drains lead to the storm drain system and if so, could they be stenciled (labeled) to raise awareness?

NO ☐ YES ☐

Go to the Resource Section for stenciling

Are there downspouts that direct water to concrete and/or asphalt that could be redirected into a garden, planter or other landscape?

NO ☐ YES ☐

Go to the Resource Section for downspout extension installation

- Look at the items indicated by a **RED X**

Is there a lot of trash that could be reduced through a cleanup event?

NO ☐ YES ☐

Use this Project Toolkit to run a clean-up event

Is there a specific type of trash that has a clear source?

NO ☐ YES ☐

Go to the Resource Section for guidelines on how to address specific trash at its source

STEP 2

Using the completed interview questionnaire:

Is there need for any waste or pollution management on campus?

NO ☐ YES ☐

Use this Project Toolkit to run a cleanup event

Are there toxic fertilizers or chemicals being used for outdoor cleaning or plant maintenance?

NO ☐ YES ☐

Go to the Resource Section for options to share with the Plant Manager

Are there sprinklers spraying onto concrete and/or asphalt and is the Maintenance/Plant Manager willing to adjust them?

NO ☐ YES ☐

Work with the Plant Manager and offer to assist and learn how to adjust the sprinklers

STEP 3

When thinking about what can be done to eliminate potential water pollution at the source, also consider understanding the impact at the beach/river:

Does the class have the ability to go on a field trip?

NO ☐ YES ☐

Go to the Resource Section for cleanup resources

CAMPUS/COMMUNITY CLEANUP EVENT

A student-run campus or community cleanup event is an opportunity for students to address trash accumulation problems in areas that might contribute to water pollution problems on campus and/or in their local neighborhood and environment.

How It Works

- Students identify pollution hot spots in their campus or community watershed, where trash debris regularly accumulates, using their completed Waste Audit and maps as a guide.
- Students gather the supplies necessary to remove that trash and debris, and outreach with the campus or community to recruit volunteers for their cleanup event.
- During the event, students provide their volunteers with background information on the impact of trash and debris on local waterways and the ocean, directions for the area to be cleaned, and safety instructions for safe participation.
- If possible, volunteers sort trash that's collected during the cleanup into separate areas for recycling.
- Once complete, the students design and implement strategies to prevent further trash accumulation.

Procedure

1. Have students use the Cleanup Preparation Checklist to plan and complete the first steps.
2. Once a date is set, use the Timeline to complete the necessary tasks needed to ensure a successful event.

Materials

- Water Audits and maps
- Cleanup Preparation Checklist (pages 17 - 18)
- Event Timeline (pages 19- 21)

Helpful Hints

Review the Preparation Checklist and Timeline ahead of time to understand what will be required.

Cleanup Preparation Checklist

☐ Choose a Location

- Identify an area where trash has accumulated or regularly accumulates. Consider an area:
  - Adjacent to large open area for staging cleanup supplies and gathering volunteers.
  - Adjacent to an area where collected trash can be picked up for disposal
  - Easily accessible for volunteers.
  - Free of potential trip and fall hazards (if unavoidable, make sure to identify for volunteers).

☐ Choose a Date

- If on campus, select a day during the school week, or if in the community, select a day during the weekend to ensure the greatest number of volunteers. Remember to:
  - Check with school administration to ensure the date is available and can be reserved, if the event is on campus. If held in the community, check with local residents or businesses to ensure minimal impact.
  - Avoid local holidays or religious observances.
  - Check the school calendar or local community to see if there are other events that the cleanup might coincide with (cleanups are great opening and closing activities for related community events or celebrations).

☐ Choose a Time

- Select a time of day appropriate to seasonal weather conditions (warm weather cleanups should be held in the morning to avoid midday heat). Remember to:
  - Plan to have volunteers cleaning for 2 to 3 hours.
  - Plan for a total commitment of to 4 to 5 hours total, which includes an hour for set-up and an hour for breakdown.

Get Permission

- If cleaning on campus, make sure you have permission from the principal and plant manager. If cleaning in the community, check in with local residents and business to minimize impact. Remember to:
  - Check with school administration about whether safety waivers for volunteers are required, if on campus.

Secure Supplies

- A variety of materials will need to be secured for use during the event. See Supply Checklist on page 24 for full list of supplies needed. When securing supplies consider that:
  - Several large tables are needed, for staging cleanup supplies and any event materials.
  - At a minimum, trash bags and protective gloves are required for the cleanup. Brooms, rakes, shovels, wheelbarrows, and other cleaning supplies may be needed depending on the area and trash to be removed.
  - Garbage and recycling collection bins will need to be available. Depending on the size and amount of trash to be collected, will help determine the size and number needed. If necessary, consider renting or getting a large dumpster sponsored for use by the school or local Councilmember's office.
  - Reusable items, such as buckets for trash and garden gloves, are encouraged to minimize additional waste.
  - Cleanup volunteers will need water, snacks, sunscreen, and a shade tent.
  - Giveaway items for a volunteer raffle at the end of the cleanup, is a nice way to reward and encourage participation throughout the event.

Determine Number of Volunteers Needed

- To ensure enough volunteers and supplies, consider the following:
  - Small clean-up areas, such as lunch eating areas or small alleys, can support 10 to 20 volunteers; while large areas, such as campus fields or several streets within the community, can support 100 or more.
  - More hands working to remove trash can support community building and stewardship, but too many volunteers can overcrowd a small area.

Cleanup Event Timeline

It takes approximately 2 months to plan and execute a campus or community cleanup event.

2 Months Before the Event

- ❑ Identify and secure a location for the cleanup.
  - Evaluate the desired site so that cleanup needs can be supported appropriately. This includes a space for volunteer check in, a staging area for supplies and an area for trash collected during cleanup.
- ❑ Prepare a cleanup event plan for the event day including time (event set-up through take down), location, and desired participants.
  - Use the details determined in the Cleanup Event Preparation Checklist.
- ❑ Present the cleanup event plan to key stakeholders (e.g. principal, plant manager, local residents and businesses) to obtain permission.
  - This includes the need for volunteer safety waivers.
- ❑ Create a promotion plan (see page 22).
  - Be sure to designate the Cleanup Event Manager (see page 23) for any questions or concerns regarding the event.

1 Month Before the Event

- ❑ Begin the Promotion Plan.
  - Make, distribute, post flyers, ads, etc.
- ❑ Begin to arrange and gather the needed supplies (use the Supply list on page 24).
  - If there is a large amount of trash to be removed, arrange to have a large dumpster for the event.
  - Seek out donations or sponsorships for the dumpster from school or local Council office, if necessary.
- ❑ Confirm that there are no campus or community calendar conflicts. Check for any potential opportunities for collaboration.
- ❑ Create information sheets and/or talking points to share with participants about stormwater pollution prevention (see page 25).
- ❑ Distribute and collect any necessary volunteer waivers and photo release forms.

2 Weeks Before the Event

- ❑ Continue Promotion Plan.
  - Begin in-person outreach.
- ❑ Continue to gather supplies.
- ❑ Assign team roles for event day (see Cleanup Event Team, page 23).
- ❑ Solicit other student groups or local community organizations to have an outreach booth at the event, if desired.
- ❑ Verify clean-up site layout with key stakeholders, including: parking, staging area, trash collection bins, and any potential site hazards (see Event Day Set-up, page 24).

Create A Larger Event

A cleanup event can be a great platform to invite others to share what they do by providing outreach tables.

- Invite local non-profits and community organizations to share their materials.
- Invite other schools or nearby campus clubs to pass out information.
- Highlight or advertise other sustainability projects happening on campus.

1 Week Before the Event

- ❑ Confirm space and access with key stakeholders.
  - Verify nearby restrooms for volunteer use.
- ❑ Arrange a place for volunteers to store their personal items during the event.
- ❑ Arrange for water and snacks for volunteers.
- ❑ Confirm cleanup team roles and team members to support them.
- ❑ Go over last minute preparation and tasks for Event Day Management (see page 25).
- ❑ Continue promotion.
- ❑ Ensure all necessary volunteer forms are received.

1 Day Before the Event

- ❑ Store supplies near cleanup site for quick setup on event day.
- ❑ Pick up water and refreshments.

Event Day!

- ❑ Have fun and be safe!
- ❑ Take pictures.

After the Event

- ❑ Return any unused or reusable supplies (see Event Day Management on page 25).
- ❑ Send email thank you notes to the volunteers.
- ❑ Send email thank you notes to the site host.
- ❑ Send email thank you to any partners, non-profits and clubs that participated.
- ❑ Complete an evaluation (see page 26).

PROMOTION PLAN

Create a promotion plan for reaching the largest audience possible for the cleanup event. Consider the following:

Who do you want to reach in the community?

- Who is your audience?
- Will some materials need to be in another language?

What do you want to communicate?

- The reasons for the cleanup.
- Date, time and location.
- Free for all participants.
- Details for involvement.
- Items for volunteers to wear/bring (closed toed shoes, clothes that can get dirty, reusable water bottle, sunscreen, etc.).
- Any additional activities happening or organizations attending.
- Phone number or email for more information.

How do you want to communicate?

- Create and send ads
  - School PTA newsletter
  - Local newspapers
  - Radio stations
- Create and distribute fliers
  - Community centers
  - Local businesses
- Social media
  - Online blogs
  - Facebook Event
  - Neighborhood websites
  - Tweets
  - Instagram
- Face to Face
  - Door Knocking
  - 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, and include the important details (why, when, where, what, who).
- Make sure the title and subheadings can be noticed from a distance and are eye-catching.
- Include appropriate graphics and/or photos.

CLEANUP EVENT TEAM

The Cleanup Event day will take a team effort. Below are suggested roles. Additional team members or assigned volunteers will be needed to support the various roles below.

Cleanup Event Manager

- Oversees the set-up and event needs of the various stations.
- Serves as the point person for any issues or questions that arise during the cleanup, including event partners, safety concerns or issues, or any questions.

Volunteer Greeter

- Greets and signs-in the event volunteers.
- Directs volunteers to the Safety and Cleanup Instruction Station.

Volunteer Coordinator

- Provides instruction on where and how to clean, and any safety hazards to avoid.
- Makes sure volunteers are already signed-in and have completed any waivers, if necessary.
- Directs volunteers to the Cleanup Supplies Station.

Supplies Coordinator

- Manages and distributes supplies to volunteers.

Collection Coordinator

- Manages the trash as it is brought by the volunteers.
- Manages the sharps container for any sharp items that are brought by volunteers.
- Manages the sorting of any recyclable materials and bagging for recycling.

EVENT DAY SET-UP

Use the list below to plan out the locations for each Cleanup Event station and how they will be managed.

Volunteer Check-In and Staging Station

- Located in front of the event area with space for volunteers to gather.
- Run by the assigned Volunteer Greeter with support of 1 - 2 team members.
- Serves as volunteer sign-in, refreshment/break area, first aid and for any questions.

Safety and Cleanup Instructions Station

- Located immediately outside the cleanup area.
- Run by the assigned Volunteer Coordinator with support of 1 - 2 team members.
- Serves to verify that volunteers have signed in, signed any necessary safety waivers, provide directions on what and where to clean and any hazards to avoid.

Cleanup Supplies Station

- Located next to the Cleanup Instructions Station.
- Run by the assigned Supplies Coordinator with support of 1 - 2 team members.
- Serves as supply management and distribution.
  - Any reusable materials should be separated and set up so they can be easily accessed and distributed.
  - Cleanup volunteers will return any unused supplies or reusable items here.

Trash Collection and Recyclables Sorting Station

- Located in the area designated by clean-up stakeholders.
- Run by the Collection Coordinator with support of 1 - 2 team members.
- Serves as the area to place the trash dumpster (if used), or to place trash collected during the clean-up for removal later, and the Sharps Station for any sharp items found.
- If sorting out recyclable materials from collected trash, designate a large area for material to be spread out and marked off for where sorted items will go.

Supplies

Volunteer Check-in

- Shade tent (if available)
- 3-4 large tables (3'x6')
- Sign-in sheets
- Pens/pencils
- Name tags
- Blank safety waivers
- Hand-sanitizer
- First-aid kit
- Refreshments/snacks/water

Cleanup Instructions Station

- Safety guidelines (see Resources page 27)

Cleanup Supplies Station

- Large, thick garbage bags (50+)
- Protective latex and work gloves
- Face masks
- Medium-sized buckets for trash collection (50+)

Trash Collection Area

- Signs for where trash is to be left
- Large dumpster (if needed)
- Sharps container or sturdy plastic jug

Recyclables Sorting Station

- Large tarp for sorting trash
- Signs showing where recyclable materials can be placed for separate bagging
- Clear bags for recycling collection (25+)

EVENT DAY MANAGEMENT

Below are helpful hints for event day management.

BEFORE

- The Cleanup Event Team should arrive at least 1 hour before the event.
- Verify any concerns regarding access and potential safety issues.
- Review assigned responsibilities.
- Set up the various stations.

DURING

- Be sure to include in the volunteer briefing the location of the various stations, available restrooms, if recyclable items are to be separated, and the cleanup end time.
- The Volunteer Coordinator should ensure that volunteers take breaks for snacks and water, and use the restroom.
- Plan to keep count of how many participants come to the cleanup.
  - Use a sign-in sheet, or assign an additional volunteer at the Check-In Station to count the number of volunteers entering.
- If there are any safety issues that occur during the event, have the Cleanup Event Manager address the situation and contact the necessary officials.
  - Write down the person(s) involved, time and location of the incident, and a brief summary of what happened for reference later.
- If there are any concerns that arise regarding access to various spaces or volunteer activities, direct any interested individuals or questions to the Cleanup Event Manager.

AFTER

- Remove any additional trash from the event and place in the Trash Collection Station area.
- Pack or put away any supplies brought to event (tables, tent, clean-up supplies, etc.)
- Take any leftover refreshments home or donate to a local food shelter.
- Thank the volunteers, location partners, and any other groups participating.

Community Awareness

Share what you have learned about stormwater pollution prevention with the community.

- Create information sheets to pass out to volunteers.
- Create talking points for the team to use when sharing information with volunteers.
- Use the Check This Out information as a resource (pages 5 - 9).

EVALUATION

Once students have completed their campus/community cleanup event, have them answer the following questions to evaluate their project and introduce some possible next steps.

QUESTIONS

1. What was the most successful part of the project?

2. What was the least successful?

3. What would you do differently next time?

4. What can be done to prevent further trash accumulation?

5. Were you glad you participated in this project? Are you willing to participate in future similar projects?

What's Next?

Another Project Toolkit

Are you interested in another project toolkit? Consider:

- Waste Reduction Project Toolkit

Battle of the Schools

Now that you have conducted a cleanup event, consider competing in the Generation Earth Battle of the Schools competition and really reduce litter on campus

- Talk to your Generation Earth Facilitator for more information.

RESOURCES

SAMPLE VOLUNTEER SAFETY GUIDELINES

The following is a sample of guidelines to be shared with event participants. Add additional guidelines as appropriate.

Volunteer Safety Guidelines

The following guidelines are intended to keep the event safe and enjoyable.

- Stay in the designated clean-up area.
- Take breaks as needed.
- Wear gloves when handling any trash. Gloves are located at the Clean-up Supplies Station.
- Drink plenty of water. Water is located at the Volunteer Check-In Station.
- Use sunscreen, as needed.
- Handle any sharp objects carefully. A container for sharp objects is located at the Trash Collection Station.
- A first aid kit is located at the Volunteer Check-In Station.

ADDRESSING TRASH AT ITS SOURCE

For the Waste Reduction and Recycling Project Toolkit, contact:

Alyson Schill

Waste Reduction & Recycling Specialist

818 623 4853

aschill@treepeople.org

PLANT MAINTENANCE ALTERNATIVES

- Integrated Pest Management
  http://www.laschools.org/employee/mo/ipm/docs/ipmpolicyretype.pdf

- Statewide Integrated Pest Management Program
  http://www.ipm.ucdavis.edu/
  University of California, Agriculture & Natural Resources

- Beyond Pesticides
  Alternatives to Using Pesticides in Schools
  http://www.beyondpesticides.org/programs/children-and-schools/alternatives-at-schools

TO LEARN MORE ABOUT THE COUNTY'S STORMWATER PROGRAMS VISIT

- http://dpw.lacounty.gov/prg/stormwater/
- http://dpw.lacounty.gov/epd/cleanla/

STORMDRAIN STENCILING

For information on storm drain pollution in your neighborhood, or to request a Storm Drain Stenciling Toolkit, contact Heal the Bay's Community Advocacy Program

Lily Ledesma

310-451-1500 Ext. 145

lledesma@healthebay.org www.healthebay.org

DOWNSPOUT EXTENSION INSTALLATION

- http://bit.ly/1KLYaXn

BEACH AND RIVER CLEANUPS

- **Los Angeles County Beaches: Heal the Bay**
  http://www.healthebay.org/get-involved/volunteer/cleanups
  – **Nothin' But Sand**
  Third Saturdays of the month, 10am – Noon
  Various Beaches, see calendar
  – **Adopt a Beach**
  Support for large group beach cleanup (must commit to three cleanups within a year)
  Submit request online using form
  – **Coastal Cleanup Day**
  Third Saturday in September
  Locations throughout County
  http://www.healthebay.org/volunteer/calendar/coastal-cleanup-day

- **Los Angeles River: Friends of the Los Angeles River**
  https://folar.org/cleanup/
  – **La Gran Limpieza**
  Three weekends during April and May
  Multiple locations down entire length of river

MULCHING GUIDELINES

How-to Mulch

http://bit.ly/1L1dqUU

DO NOT PAY for mulch! Many free options exist:

– **LAUSD**

Contact Mahmud Shieikh-Ali at Mahmud.shiekh-ali@lausd.net

– **Los Angeles City Recreation and Parks**

Work with a TreePeople mentor to arrange for mulch.

– **For a large amount, contact a local tree trimmer**

Let them know:

- It will be used around trees and plants
- No chips from a palm or diseased tree
- They can deliver it to the site

REFERENCES

1. http://www.wrcc.dri.edu/narratives/CALIFORNIA.htm
2. http://www.kcet.org/socal/departures/columns/la-river/los-angeles-flood-of-1938-channelization.html
3. http://ladpw.org/wmd/watershed/LA/history.cfm
4. http://dpw.lacounty.gov/lacfcd/
5. http://focus.senate.ca.gov/sites/focus.senate.ca.gov/files/climate/SB_778_Fact_Sheet.pdf
6. http://water.epa.gov/polwaste/nps/whatis.cfm
7. http://waterandpower.org/museum/Water_in_Early_Los_Angeles.htm
8. http://wsoweb.ladwp.com/Aqueduct/historyoflaa/index.htm
9. http://www.gov.ca.gov/docs/4.1.15_Executive_Order.pdf

COUNTY OF LOS ANGELES CALIFORNIA

GENERATION EARTH

COUNTY OF LOS ANGELES PUBLIC WORKS Public Service That Works