

LAUNCH for Long Beach Toolkit: Drain Smart

Drain Smart to protect our watershed!

Yes! You read that correctly. In this toolkit, Grades of Green has partnered with the City of Long Beach to help you learn how to “Drain Smart” and how this small action has a big impact on our sewers and watersheds.

Within this toolkit, you’ll find various downloadable resources. For your convenience, you can access them all in one place by scanning the Toolkit Resources QR code on the last page to view them in a Google Drive folder.

This toolkit was created in partnership with the City of Long Beach Utilities.



Have you registered?



Toolkit Details

NGSS

This toolkit address the following Science and Engineering Practices (SEPs) within the Performance Expectations of NGSS for Grades K-2 and 3-5:

- Asking Questions and Defining a Problem
- Planning and Carrying out Investigations
- Analyzing and Interpreting Data
- Using Mathematics and Computational Thinking
- Constructing Explanations and Designing Solutions
- Obtaining, Evaluating, and Communicating Information

The cover image for the Drain Smart toolkit. It features a green background with a white sink and a cartoon girl in a green dress standing next to it. The text "GRADES OF GREEN LAUNCH Eco-Toolkit" is at the top left, followed by "Drain Smart" in large white letters. Below that is the text "Teach your friends to limit water pollution and keep our watersheds healthy by draining smart!". At the bottom, there are four green boxes with white icons and text: "Skill Level" (puzzle pieces), "Climate Crisis Topic" (globe), "Project Time" (calendar and clock), and "What You'll Need" (toolbox).

Skill Level

Grades K-5,
led by a teacher,
parent or school
administrator

Climate Crisis Topic

Water & Waste

Project Time

2 -4 weeks

What You'll Need

Computer/Tablet,
printer (optional),
pencils, markers,
paper, tape

What is a Watershed?

Water that collects on or under an area of land and then flows into a waterway such as a river, lake, or ocean is called a “watershed”. There are plenty of reactions that happen in the sewers after we flush (yes – the toilet!) or drain and that is why it is important to flush smart so that we can drain smart too!

Launch this toolkit to encourage your classmates, friends, teachers, and parents to limit water pollution and keep our watersheds healthy.

Why It’s Important

Pollution from flushing items that do not belong in our toilets is threatening pipes, sewers, and waterways. The water that we use for our daily activities comes from different bodies of water, but human activities have led to many of them becoming very polluted. Along with pollution, what we flush and put in our sinks can lead to clogged pipes which can cost millions of dollars to repair.

What You Will Accomplish

Students will run a public action Drain Smart campaign to help their school and community keep pipes, sewers, and waterways clean. This will protect the health of their watershed and reduce damage to their wastewater infrastructure in Long Beach.

How does Draining Smart protect Long Beach’s Watershed?

The City of Long Beach currently operates and maintains over 700 miles of sanitary sewer lines, safely collecting and delivering over 40 million gallons of wastewater per day to the Sanitation Districts of Los Angeles County for treatment. There are many levels of ‘treated water’ and ways that it can be reused in a positive manner. Some common ways to reuse and repurpose treated water in Long Beach are to irrigate parks, recharge our groundwater basin, and street sweep. By making sure you are draining water properly, you are helping your city collect and treat wastewater efficiently. Read more by scanning the QR code above!

Learning Objectives

Analysis

- Students will analyze their daily habits to see where they can improve their flushing habits.

Project Management

- Students will keep track of how many pledges they receive.
- Students will practice leadership skills by delegating tasks to each other.

Evaluation and Assessment

- Students will track and evaluate the impact of their project

Long Beach’s Sewer System Info:



Educator Project Plan

Follow the steps below to set up a successful Drain Smart Campaign at your school!
Need help? Email us at info@gradesofgreen.org!

Track your metrics and submit your impact after implementing this toolkit. Your feedback helps keep our programs free for all across the globe.

Determine Participants

Use our Drain Smart Sign-Up Sheet Template to create your team!

- A Student Group (such as a club, before/after school program, non-school organization)
- A whole class
- The whole school

Drain Smart Sign-Up Sheet:



Pro Tip:

- Create positions, roles, and committees such as researchers, presenters, recorders, promoters, etc.

Why Should You Drain Smart?

The resources provided below can be shown as a slideshow (see the QR code below) or printed out as individual worksheets for students to review.



To Flush or Not to Flush?

According to the Responsible Flushing Alliance, 93% of wipes are not meant for flushing down the toilet. These wipes are called non-flushable wipes. They can cause harm to sewer systems and infrastructure because they are made with long, often plastic fibers and are not meant to dissolve in water. That's why it is important to look at the package and if you see the "do not flush" symbol, toss that wipe in the trash and never the toilet. Non-flushable wipes include all baby wipes, cleaning wipes, disinfecting wipes, and makeup removal wipes, just to name a few. When these products are flushed down our pipes and sewers, they do not decompose and rather, they build up into what we call fatbergs, which are giant balls of wet wipes and other waste matter that require lots of money to remove from our sewers. Wipes that are specifically called flushable (about 7% of all wipes) are made of short, natural plant-based fibers and are made to dissolve in water like toilet paper. But, if you are unsure of what to do, it is always better to toss a wipe in the trash rather than the toilet. In addition to non-flushable wipes, other items you should never flush down your drains are fats, oils, and grease (FOG). These substances can also clog the pipes connecting your toilet or sink to the water treatment facility. If you want to learn more about which items should never go down the drain, check out the healthy sewers resource from the City of Long Beach below! [1]

Know Before You Go

The Clean Water Act of 1972 just turned 50 years old, yet over 50% of the lakes and rivers in the United States are labeled "impaired". This means that the water is too polluted for us to swim, drink, or participate in any other fun activity with these water sources. [2] In Long Beach, most of our waters are clean enough for everyone to play and swim in, but these waters need to be tested every week to ensure there are no dangerous pathogens in the waters. All water recreation areas in the city are tested every week for dangerous bacteria and viruses that can make people very sick. Check out more safety tips for recreational swimming in Long Beach's waters below! Additionally, all storm drains flow to the ocean, so just like the Los Angeles River, anything you toss in these drains, will inevitably get dumped in the ocean and can harm marine life. You can check out health & safety levels for all beaches in your city below! According to the Environmental Protection Agency, **850 billion gallons** of raw sewage is dumped into waterways across America every year. This is about the same amount of water the Mississippi River carries into the Gulf of Mexico annually. [1]

Slideshow:



Think Before You Drain!

The National Association of Clean Water Agencies (NACWA), states that it costs over \$400 *million* dollars to fix and clean up wastewater treatment equipment when we flush non-flushable wipes and items in the toilet. If our sewage systems get clogged or leak, it can pollute our groundwater and even flow back into our homes affecting the safety of our community. This is a big problem that can be easily prevented since the Long Beach Reclamation Plant currently treats 18 million gallons of wastewater per day. This issue is worsened by the amount of clogging items being pumped down our drains. There are several other items that should never be flushed or put down a drain. Aside from wet wipes that can create a fatberg, you should never put fats, oils, and grease (FOG) because these materials are not able to break down in water like toilet paper. When we drain *and* flush smart, we save our water, time, health, and money. [3]

Fats, Oils, and Grease:



Long Beach Grease Management Program:



Citations and Resources

Healthy Sewers – Long Beach:



[1] – Flushing Facts vs. Myths



[2] – Half of U.S. Water is Too Polluted



Long Beach Water Quality FAQs



[3] – The Cost of Wipes on America’s Water Utilities

Long Beach Water Monitoring



NACWA



Why Water is a Social Justice Issue

Millions of people around the world do not have access to safe, clean water for sanitation, drinking, or other activities. All over the world, including in the United States, there are communities that only have polluted water to drink, bathe, and play in, which makes them sick. Typically, this polluted water supply occurs in communities of color and/or lower income communities. Their governments might not have laws or technology in place to protect the health of their environment or they might not hold polluters accountable for the damage they cause. An example of this injustice is in Long Beach where in 2022, a 48-inch sewer main malfunctioned and over 8 million gallons of sewage spilled into the Dominguez Channel and later emptied into Los Angeles Harbor. Due to the overflow of sewage, 7 miles of coastline was shut down in Long Beach due to how dangerous untreated sewage water can be to people who swim in it or ingest it. One of the potential flaws in LA County’s water systems could be attributed to its aging or faulty infrastructure and why there is a need to regularly update these systems to maintain safe and healthy communities of people and natural spaces. Even in places like Long Beach where water municipalities are headstrong, there are instances of people not being able to pay their water bills and having to live with no running water and with concerns of backflow of untreated wastewater.

Watch These Short Videos to Learn About Draining Smart



‘Cooking with Gourmet Gary: Disposing of F.O.G.’



‘What is a Watershed?’

Think About It!

Pre-Activity Questions

- What is “responsible flushing”?
- How does polluted water affect the health of humans and the environment?
- Where does water go when it leaves your school or home?
- What are some ways you can prevent clogged pipes and water pollution in your community?
- Have you ever seen someone flush something they shouldn’t have? What happened?

Take Action: How to LAUNCH a Drain Smart Campaign

Lead students through the “Drain Smart Campaign” activity with guided instructions. Check out “Pro Tips” for additional help.

1. Decide Who’s Participating and Assign Roles

- Who is on your Campaign team? What roles will each student have? Use the Drain Smart Sign Up Sheet and determine who and how many students/staff are participating.
 - Researchers: Researchers will gather information for the campaign
 - Student Educators: Educators will inform fellow students how and why they should flush responsibly and protect their water resources.
 - Marketers: Marketers will create content such as fliers about picking up trash and smart flushing habits.
 - Notetaker: Notetakers will record data from students.

Drain Smart Sign-up Sheet:



2. Choose a Target Audience

Who do you want to reach with your Drain Smart and Watershed Protection campaign?

- A Class
- A Grade Level
- The Whole School
- Your Community (this can include your school/parents/other residents in your community)

3. Gather Your Materials and Design Your Flyers

Before you start protecting your watershed with responsible flushing and draining, you’ll need to start gathering your materials. This can include the following:

- Pencils, markers, paper, tape
- Printable flyers on responsible flushing (see resources at the bottom of this toolkit) and protecting your watershed
- Create your own flyers and call out items that should not be flushed or drained:
 - Non-flushable wipes
 - Paper towels
 - Tissues
 - Cotton Swabs
 - Floss
 - Period products (tampons and pads)
 - Fat, oil, and grease products (FOG)
 - When in doubt – throw it out!
- Have “marketer” students create flyers to post around campus announcing your responsible flushing and watershed protections campaign and suggested actions everyone can take.

4. Launch Your Drain Smart Campaign

It’s time to launch your Drain Smart campaign! Please use the resources below to educate your peers and community about ways to keep pollution out of our waterways. You may use one or all of these:

- Have Educator Students walk around campus visiting classrooms to inform other students on the benefits of protecting your watershed and examples of smarter habits to improve water quality.
 - Use our Drain Smart Walking Assembly Script as a reference.
 - Customize letters and other documents to parents, students, and teachers
 - Share the information to the right about the differences between flushable and non-flushable wipes
 - Read through the Flush Smart Activity Book
- Pledges – Use a free online platform such as Change.org or MoveOn.org to collect pledges from Students, Parents, Teachers, and Staff.
- Post your signs and flyers around campus. You can scan the QR codes to the right for signs from the Responsible Flushing Alliance in both English and Spanish.

Pro Tips:

- You can use websites like Canva or Google Slides to create your flyers. Include information about the benefits of a healthy watershed and clean water habits.
- You can also use infographics and slides from this toolkit.
- Design your own posters – you can even hold an art competition!

Drain Smart Assembly Script:



Differences Between Flushable and Non-Flushable Wipes:



Flush Smart Activity Book:



Do Not Flush and Pour:



Do Not Flush and Pour (Español):



Pro Tips:

- **Spread Out Your Campaign:** Your Campaign can be spread out over the course of one month, one semester, or the whole school year! Depending on what timeline works best for you and your students.
- **Create a Competition:** Hold a contest to see which class on campus returns the most parent pledges! Incentivize the winning class with a prize such as a pizza party from a local vendor or gift cards/coupons!
- **Be Sure to be Thankful:** Thank your schoolmates, teachers, staff, and parents for helping you keep your waterways clean from pollution. Be Sure to be Thankful! Thank your schoolmates, teachers, staff, and parents for helping you keep your waterways clean from pollution.

5. Track Your Impact

At the end of your campaign, use the Drain Smart Tracker to determine the number of water friendly actions you and your community took, including how many people you educated and how many pledged to drain responsibly.

- Take shorter showers (scan the QR code to the right for more information)
- Use reusable water bottles
- Turn off your faucet when brushing your teeth or washing dishes
- Reduce watering gardens
- Obtain a rain barrel
- Reduce amount of car rides
- Reduce electricity use
- Reduce meat consumption

Drain Smart Tracker:



Save Water by Showering Better:



Reflection Questions

How'd It Go?

- Did participating in this campaign change the way you/your team view water? How?
- How will this campaign change your future flushing habits?
- What was the most interesting or surprising fact that you learned from this lesson?
- What are some other ways you can prevent water pollution?
- How will you make sure you and your family drain items correctly at home? (i.e. create posters with pictures of items that should and should not be flushed, lead a family discussion on what you learned in this activity, etc.)

Report Students' Impact

Congratulations!! You've implemented Drain Smart! Don't let all that hard work go unnoticed. **Submit your results by scanning the QR code below.**



Project ongoing? No problem! Let us know what you've done so far.

By reporting your impact, Grades of Green can:

- CELEBRATE and elevate your students' hard work and success.
- Offer our programs FREE for all students across the globe.
- AWARD stipends and certificates to hard-working educators and students.

Please take a few minutes to submit your results. Thank you!

Provided Resources

Drain Smart Sign-up Sheet:



Drain Smart Walking Assembly Script:



Drain Smart Tracker:



Drain Smart Presentation Slides:



Drain Smart Wrap Up Form:

Toolkit Resources – Google Drive Folder:



Congrats on completing the Drain Smart Eco-Toolkit!

Did you enjoy this toolkit? Find your next project below!

