

KIDS for the BAY

Report to the Alameda County Fish and Game Commission
December 12, 2025

INTRODUCTION

In the 2024 - 2025 school year, with the support of an \$8,000 grant from the Alameda County Fish and Game Commission, KIDS for the BAY (KftB) delivered the Watershed Action Program (WAP) to ten classes in four elementary schools in Oakland and in Hayward. KftB lessons and activities engaged students in hands-on learning, helped them connect to their local watershed environments, and empowered them to work together to have a lasting, positive impact for their schools and communities. The WAP included watershed lessons and an Environmental Action Project for each class, as well as a bus field trip to a local creek, bay or ocean location.

Partner classes and schools included:

- One third grade class and one fifth grade class at Highland Community School in Oakland
- Two fifth grade classes at Emerson Elementary School in Oakland
- Four third grade classes at Lincoln Elementary School in Oakland
- Two fourth grade classes at Burbank Elementary School in Hayward.

Thanks to the support of the Alameda County Fish and Game Commission, KIDS for the BAY achieved the following goals:

- 274 students increased their knowledge of watershed science and became stewards of their local watershed environment
- 274 family members learned how to reduce pollution to the local watershed and protect wildlife from the harmful impacts of plastic pollution
- Ten teachers increased their confidence in using the watershed as an educational resource
- The WAP was integrated into the curricula and culture of four partner schools.

Student participants in the WAP included an average 82% under-resourced, low-income students, 93% students of color, and more than 45% English Language Learners.

PROGRAM HIGHLIGHTS

Watershed Lessons

Watershed Investigations and Scavenger Hunts

Watershed Scavenger Hunt

The students were excited for the opportunity to explore their school campus in a Watershed Scavenger Hunt. Each group worked together to discover the elements of their local watershed. Using their senses, observational skills and curiosity, students became more attuned to their surroundings. They ran over to a large tree growing in the middle of their play yard to search for minibeasts that might be living in the soil. "I see ants climbing on the trunk of the tree!" said Isabella. "Let's draw them!"

Jaxon tried his hardest to search for birds but he could not find any. "I keep looking to the sky but I can't find any birds!" he said sadly. His partner, Melanie, began to look more closely at the trees and noticed movement amongst the leaves. A bird started flitting between the branches. "There's a bird! It is really small with tiny wings, two legs and a short, sharp beak. Quick Jaxon, start drawing!" Melanie urged.

Plastic Pollution and its Impact on Aquatic and Marine Life

Students were sad to learn that storm drains carry trash pollution to our waterways and perpetuate the pervasive problems of microplastics and their presence in aquatic food chains. To further illustrate the consequences of plastic trash pollution,

students studied images of aquatic organisms struggling with the impact of marine debris. Upon seeing pictures of sea lions entangled in fishing nets and the polluted stomach contents of an albatross, students were inspired by a new sense of urgency to mitigate negative human influences on the natural world.

Neighborhood Trash Survey & Cleanup

The students capitalized on their motivation to take immediate action to protect the watershed by participating in trash cleanup on their school campus. The young Environmentalists made initial predictions of the types and amounts of pollution they would encounter. Outside their classroom, the young Environmentalists worked in groups to catalog and collect the litter they found, preventing trash pollution from harming local waterways. "We found lots of bottle caps!" reported Geovanni. They were proud to decrease the amount of debris entering our bay and ocean. "How do landfills impact our soil?" KftB Educator Neda Ibrahim asked the young Environmentalists. "Microplastics can get in the soil," suggested Joséacruz. "Plastics won't go away for hundreds of years!" exclaimed Adrian

Practicing the Five Rs

All the young Environmentalists agreed that preventing pollution from entering our environments is a much better option than cleaning it up after the fact. They had some insightful and creative ideas about using the Five Rs (Refuse, Reduce, Reuse, Recycle, and Rot) to create less waste. "When something rots, it goes back into the soil, and it's good for the soil. It's also called composting!" said Ruben. "Plastic water bottles can be broken down and turned into other plastic items like straws and forks," suggested Daysi. "Reduce is when you use less plastic and make less waste, or stop waste in the first place!" said Leilani. "Recycling means you throw something away and then it gets made into something new," said Dylan. "Refuse is when you say 'NO, I don't need that!' to plastic. Especially plastic stuff that you only use once," added Daysi.

Discovering Bay Organisms & Adaptations

Bringing the San Francisco Bay to Life

"Whoa, look at this huge crab!" exclaimed Enrique, his eyes wide with wonder as he carefully held up a bright orange Dungeness crab. "Its legs are so sharp at the tips! How does it walk with those?" Classmates gathered around, fascinated by the spiky, shelled creature. This spark of curiosity and awe was one of many during the bay organism investigation activity led by KIDS for the BAY (KftB) Educator, Neda Ibrahim, in Teacher Tracy Dordell's fifth grade class at Highland Community School in Oakland. Students buzzed with excitement as Ms. Neda brought the San Francisco Bay estuary to life right inside the classroom! With real striped bass fish, Dungeness crab, bull kelp, and red algae specimens at their fingertips, our Oakland scientists couldn't wait for a hands-on science adventure that would deepen their connection to the natural world. "I think it has spines on its dorsal fin because when a predator tries to eat it, the predator will get poked and leave the fish alone," said Aiden. "I think the Dungeness crab is a decapod because it has ten legs!" exclaimed Tenzin. The students examined the rough, and sometimes hairy shell, and even mimicked a sideways gait by doing their best crabwalk impressions!

By connecting with bay organisms right inside the classroom, our students gained a deeper understanding of the importance of protecting our local environment for wildlife and people. [Read the full story on our blog page.](#)

Assessing Watershed Health

Watershed Health Survey

The Hayward Environmentalists from Burbank Elementary School assessed the health of their watershed, using a Watershed Health Survey. Working in groups, they categorized *healthy*, *unhealthy*, and *in-between* aspects of the watershed environment on their school campus. "I think the trees that are all around us are indicators of a healthy watershed, because trees provide a place for birds to live and raise their babies," said Jocelyn. "I think the fact that we have a school garden means that our school is a healthy habitat. I've seen earthworms in the dirt and many spiders and insects living in the garden," said Jaxon.

After exploring their campus and assessing the health of the watershed environment, students tramped back to their classroom to discuss their findings. "I think that big, random tree in the middle of our playground is healthy, because it's part of the natural environment. It provides habitat for animals and shade for us, but it's surrounded by cement, which is

unnatural, so we put it in the *in-between* category,” Jenaya shared. “I think some indicators that our watershed is unhealthy is all the plastic trash we found! We found lots of plastic bags and water bottles!” shared Lamar. “Napkins, soda cans, and Welch’s Fruit Snacks wrappers are all indicators of an unhealthy watershed environment!” said Ana. After sharing their observations, the class agreed that the large amounts of plastic trash pollution on their school campus was the most prominent indicator of poor watershed health.

Ms. Yvette asked the students to work in groups to brainstorm and identify solutions to reduce the amount of plastic trash pollution in their watershed and combat its harmful impacts. The student Environmentalists eagerly shared the solutions they came up with: “You should reuse plastic water bottles and recycle them properly. You should reduce the amount of plastic water bottles you use!” said Isabel. “I think we should throw away our snack wrappers properly. I also think corporations should change their candy wrappers to be more eco-friendly,” said Lasaro. “We should boycott plastic!” said Cruz. “Scientists can use a special bacteria to break down plastic,” said Theo, referring to recent research surrounding different bacteria that can break down certain plastics and plastic ingredients. “You can buy items in bulk to reduce the amount of packaging, or corporations and stores can use compostable packaging.”

Environmental Action Projects

Burbank Elementary School: Sunol Watershed Lands Field Trip

Upon students’ arrival at Sheep Camp Creek in Sunol, volunteer engineers and biologists from our partner organization, Avila and Associates Consulting Engineers, Inc. welcomed the class to this special restoration site, managed by the San Francisco Public Utilities Commission. Avila Volunteer Naomi explained, “This is a special restoration site, managed by the SF Public Utilities Commission. You are all very lucky to be here today! It’s not open to the public, and only two KftB classes each year get to come here and help us restore this special habitat! This site is home to two very special native species, the Tiger Salamander and the California Red-Legged Frog.

Avila Volunteers explained that the class would be rotating through three stations: the Birding Station, the Biologist Station, and the Biodiversity Station. At the Biodiversity Station, “Red-legged frogs can lay up to 2,000 eggs at a time! How many of those offspring do you think survive to adulthood?” Naomi asked. “I think about one-hundred frogs survive to adulthood!” said Melanie. “Only two frogs out of 2,000 will survive!” said Naomi. “California red-legged frogs are an important food source for many other animals! Without red-legged frogs, bigger predators like snakes and birds wouldn’t survive!” Naomi showed students several photos of tiger salamanders at each stage of their life cycle. “The larvae look like axolotls!” said Yaiza, pointing to the salamander larvae’s external gills.

At the Biologist Station, Volunteer Biologist Melissa led students in an owl pellet dissection activity. Students dissected owl pellets and examined the bones and under field microscopes. “Owls regurgitate all the parts of the animal they can’t digest,” explained Melissa. “Kind of like how cats cough up hairballs!” added Saira. “What can we learn about owls by investigating their pellets?” asked Melissa. “We can tell what the owl recently ate,” replied Pharis. “We can tell if the owl is healthy or if it’s sick,” said Theodore. The student Environmentalists dissected the bones and then tried to assemble complete skeletons of the owl’s prey using diagrams.

At the Birding Station, Volunteer Biologists Cynthia and Joie May discussed the different adaptations that birds of prey might have. “Why do you think turkey vultures have no feathers on their head?” she asked. “So they don’t get dirty when they eat dead animals!” said Catalina. “Decaying animal matter might carry bacteria, so this helps turkey vultures stay healthy,” said Kimberly. Cynthia also pointed out a red-tailed hawk circling in low, slow circles overhead and used the opportunity to teach the class about predation. “Raptors like red-tailed hawks have excellent vision to spot small and camouflaged prey moving on the ground,” Joie May explained. “Owls have developed adaptations that make them virtually silent hunters,” added Fernando.

The student Environmentalists shared something they learned or something they loved about the field trip. “I learned that owls throw up the bones and fur they can’t digest,” said Nadia. “I loved when we got to touch the snake. I also liked learning about all the different bird and amphibian species that live in Sheep Camp Creek,” said Cristian.

Highland Community School: Ocean Acidification Action Project

In Celeste McBride's Third Grade Class at Highland Community School, students participated in the Ocean Acidification Environmental Action Project to learn more about how greenhouse gas emissions increase the acidity of the Pacific Ocean, which harms watershed and marine ecosystems. "Imagine that you want to build a house. But, as you start to build, you realize that you don't have enough concrete or wood or other materials to build it. One of the effects of increasing acidity is a reduction in the availability of calcium carbonate in the ocean. As the ocean grows more acidic, it becomes harder for marine organisms to build their shells and exoskeletons, and harder for them to survive," explained KIDS for the BAY Educator Neda Ibrahim.

Through applied, hands-on science, the Environmentalists discovered firsthand the importance of keeping our oceans healthy, and the consequences of our reliance on energy from fossil fuels. The Ocean Acidification Action Project empowered students in Oakland to take action to protect the delicate balance of the marine food web and make behavior changes to reduce their carbon footprint. The class used the pH scale to determine the acidity of different mixtures and solutions to stimulate how calcium carbonate (represented by a TUMS tablet) reacts to acidic and basic solutions.

"Why is it important to keep our oceans healthy?" asked Ms. Neda. The Environmentalists launched into important discussions of what our ocean and marine food webs provide for us, and the many ways humans and wildlife depend on the ocean for survival. "It's important to keep our oceans healthy so that the fish don't die. They feed us and other animals," said Matias. "If we don't have fish, that would affect the woodland creatures, like bears and other carnivores. If we keep our oceans healthy, we are also helping forest ecosystems," said Dominique, demonstrating her deep understanding of the interconnectedness of different ecosystems within a watershed.

After discussing the importance of a healthy ocean, the Environmentalists returned to their solutions to observe what happened after they added a TUMS tablet. They discussed the results of the experiment: "The TUMS in the orange juice got smaller. It's dissolving, just like a shell!" said Christina. The opportunity to lead hands-on science investigations helped the Highland Community Environmentalists form connections between fossil fuel emissions and the health of bay and marine ecosystems.

Lincoln Elementary School: Water Quality Testing at Lake Merritt Action Project

Students from Lincoln Elementary School in Oakland had the opportunity to walk from their school to Lake Merritt to learn more about this special, brackish water habitat. Volunteers from Rotary Nature Center Friends (RNCF) helped our young scientists test lake water quality using special scientific tools. Guided by RNCF Co-Chair Katie Noonan, students used special scientific instruments to assess the five key indicators of Lake Merritt's health (Temperature, Dissolved Oxygen, pH, Conductivity and Salinity, and Turbidity). Each pair of students practiced using a hydrometer, a scientific instrument used for measuring water salinity containing a water sample from Lake Merritt. At the end of the day, students completed the Lake Merritt Water Quality Report Card to assess the data they collected as a class. Our young scientists were equipped and empowered to collect data and draw scientific conclusions about the health of the lake, and take up their important roles as stewards of this special watershed habitat.

Field Trips

Burbank Elementary School: Sunol Regional Wilderness Field Trip

Sunol Regional Wilderness is an amazing place to glimpse wildflowers, from the instantly recognizable California poppy to lupine, native irises and California lilac. Students from Burbank Elementary School in Hayward had a blast discovering nature, including several species of wildflowers native to the San Francisco Bay Area, at Sunol Wilderness!

First, KftB Educator Yvette Diaz Samayoa distributed binoculars that would allow students to closely observe wildflowers. As they waded through vast, grassy fields bursting with color, students spotted purple lupine and Douglas Iris. "When the wind blows through the grass, it looks like waves," observed Kaliyah.

After making their initial observations, Ms. Yvette gave each student a clipboard, a half sheet of white paper, a paint swatch, and colored pencils. Students searched for a flower that exactly matched their paint swatch. Once they found their match, they quietly studied the flower and prepared to sketch it. "The middle of the sunflower looks soft and fluffy," said Sofia. She began to draw out her sunflower. Emmanuel studied a small, yellow dandelion. "You can tell these are young

dandelions by their shape, their color and their pattern!” After the activity, students shared what they loved about their field trip and the opportunity to learn in the outdoors. “I loved it when we went on a nature walk and I saw lots of flowers. I learned about all of the pretty flowers that I saw,” reflected Saira. Students identified the following wildflowers: California poppy, common fiddleneck, blue-eyed grasses, silver lupine, mule’s ears, and wild radish flowers.

Students from Burbank Elementary School had a blast connecting with nature and studying wildflowers and native plants at Sunol Regional Wilderness Preserve. [Read the full story on our blog page.](#)

Highland Community School: Rodeo Beach Field Trip

Students in Teacher Tracy Dordell’s class at Highland Community School in Oakland buzzed with excitement when they arrived at Rodeo Beach and caught their first glimpse of the Pacific Ocean. “Are we going to get to hike up there?” Giancarlos asked, pointing to the surrounding hills. “Are we going to see lots of animals today?” wondered Itzy. KftB Educator Neda Ibrahim called students’ attention to the beautiful, blue Pacific Ocean behind her. “Who can tell me the name of this body of water?” she asked. “The Pacific Ocean!” said Angely. “You have all learned about your local watershed, and how water flows from creeks and streams to the San Francisco Bay and eventually, the Pacific Ocean. Today, we’re going to spend some time learning about and helping to care for this ocean beach habitat. We’re going to take a hike and see a lot of birds,” explained Ms. Neda.

The Oakland fifth graders were eager to grab binoculars and bird guides and begin their hike along the coastline. “I saw a flock of brown pelicans flying overhead!” exclaimed Josecruz, flipping through his bird guide to show Ms. Neda the illustration of this large seabird. “Its scientific name is *Pelecanus occidentalis*,” he added. After lunch, Ms. Neda encouraged the young Environmentalists to explore Rodeo Beach and find one natural artifact to share with their classmates. Students scoured the beach searching for their artifacts: “I found a claw! I think it’s from a raptor or bird of prey,” said Imani. “I found a big blue mussel shell with a bunch of lichen and barnacles growing on it,” said Amaya. “I found pollution!” said Darya, holding up a crumpled plastic water bottle. “I found a feather! I think it’s from a western gull,” observed Masi. “I found a crab leg! I think a bird ate the crab, but the leg fell out of its mouth as it flew away,” said Angely. Our Highland Community School students had so much fun connecting with nature, discovering local birds, and learning more about marine ecosystems and the Pacific Ocean at Rodeo Beach.

Student Program Reflections:

“If one part of the food chain collapses, many animals would lose their food source. For example, if all blue oysters disappear, all the animals that eat blue mussels would die because their food source would disappear. We need to take care of our San Francisco Bay and Pacific Ocean or else we will lose one of our food sources!”

Ruben, Fifth Grade Student, Highland Community School, Oakland

“I loved it when we went on a nature walk and I saw lots of native California wildflowers. I learned about all of the pretty flowers that I saw. We identified California poppy, common fiddleneck, blue-eyed grasses, silver lupine, mule’s ears, and wild radish flowers.”

Saira, Fourth Grade Student, Burbank Elementary School, Hayward

“Landfills are bad because they pollute the dirt, and worms and other animals get impacted by the trash that is harming their environment.”

Karicia, Fourth Grade Student, Burbank Elementary School, Hayward.

PROFESSIONAL DEVELOPMENT FOR PARTNER TEACHERS

KftB partner teachers increased their confidence and skills in teaching environmental education by observing and participating with our Educators as they led the watershed lessons and activities. Teachers were thrilled with how much their students learned.

“Our KIDS for the BAY lessons provided valuable and pertinent information about our watersheds. My students became very aware of how their everyday choices and behaviors affect their community. Students also began to

see how their community was connected to the entire planet. They became environmental stewards. They encouraged and inspired their families to practice the Five Rs at home and began to feel truly empowered to make change! They loved getting to see the Pacific Ocean. This was the final connecting piece for my students. They had a firm grasp of where our water goes, and that our watersheds and our world are truly connected.”

Tracy Dordell, Fifth Grade Teacher, Highland Community School, Oakland

“Students are more aware of different types and bodies of water, they understand what a watershed is, and have a better understanding of what causes pollution to these bodies of water, and how to keep our waterways cleaner. All the hands-on activities in the classroom and at Lake Merritt were informative, educational and engaging. The greatest success of our KftB program was that it provided a learning space that created life-long memories and attachments to the local environment. We really appreciated our KftB Educator Sabreena Verma’s vibrant energy and skillful presentations.”

Marcos Zuniga, Third Grade Teacher, Lincoln Elementary School, Oakland

2025-2026 SCHOOL YEAR

In the current school year, we are excited to have already begun school visits to teach engaging, hands-on lessons and connect students to their local watershed environment. Our students are diving into hands-on watershed science activities in the classroom, connecting with their local environment in watershed scavenger hunts outside, and conducting school campus and neighborhood trash cleanup projects to prevent litter from entering the storm drain system. This school year, two classes at Southgate Elementary School in Hayward will be participating in the Natural Pesticides Environmental Action Project. In this project, students will learn about the impacts of chemical pesticides on watershed health. Students will make their own, watershed-friendly natural pesticides to use in their school garden and at home to minimize chemical pollutants in water, soil, and local watershed ecosystems.

One class at Piedmont Elementary School and two classes at Encompass Elementary School in Oakland will also participate in the Natural Pesticides Action Project. The other class at Piedmont Elementary School will participate in the Ocean Acidification Action Project. In this project, students will learn about the impacts of greenhouse gas pollution on bay and ocean organisms. Students will learn how to take action to reduce their carbon footprints. Students will also embark on nature-based bus field trips in the outdoors, where they will study and explore a bay or creek habitat.

Watershed Action Program spaces are filled for this school year, with partner teachers eager to work with KIDS for the BAY. It is inspiring to know that so many teachers are committed to incorporating hands-on environmental education into their curricula. With the support of our funders and donors, we continue to deliver engaging and equitable environmental education programs to our under-resourced partner schools.

ORGANIZATIONAL UPDATE

In the 2024-2025 school year, KIDS for the BAY partnered with **165 teachers and 4,618 students** in our environmental education programs.

Our young Environmentalists accomplished the following projects:

- **4,618 KftB student leaders** created and shared informational posters, videos and environmental pledges at special presentation events to teach their families and school communities about the importance of protecting the local watershed and the San Francisco Bay to keep these environments clean and healthy. They also made and distributed green pesticides for school gardens, and led safe bay fish cooking presentations to teach their families how to reduce intake of toxins and protect their health. In addition, student leaders completed creek restoration activities including planting projects and ivy removal.
- KftB student rangers cleaned up **2,747 gallons of trash from their local watershed environments, including school campuses, local parks, creek, bay, delta, and ocean habitats.**
- KftB student environmentalists **completed 4,373 environmental stewardship hours**, cleaning up and protecting the environment we all share, and educating others about protecting the environment.

Student participants included more than 65% low-income students, 87% students of color and 47% English Language Learners.

Partnerships

In the 2024-2025 School Year, we began a new partnership with the East Bay Municipal Utility District – Wastewater Division to help increase awareness about reducing pollution to wastewater and water treatment plants. KftB developed a new lesson focusing on wastewater treatment and pollution prevention, which was integrated into the Oakland Watershed Rangers Program. This new lesson was delivered to seven classes, including four third grade classes at Lincoln Elementary School in Oakland, and two classes at Fairmont Elementary School in El Cerrito, also funded by Stege Sanitary District and the City of El Cerrito.