



Mark Twain Elementary School

California Nominee to
U. S. Department of Education Green Ribbon Schools
Public School



Prepared by
California Department of Education
School Facilities and Transportation Services Division
<http://www.cde.ca.gov/ls/fa/sf/greenribbonprog.asp>
January 2014



2013-2014 School Nominee Presentation Form

PART I - ELIGIBILITY CERTIFICATION

School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes one or more of grades Pre-K-12. (Schools on the same campus with one principal, even a Pre-K-12 school, must apply as an entire school.)
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review.
4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.



U.S. Department of Education Green Ribbon Schools 2014

Charter Title I Magnet Private Independent

Name of Principal Ms. Ellen Ryan
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name Mark Twain Elementary School
(As it should appear on an award)

School Mailing Address 5201 E. Centralia
(If address is P.O. Box, also include street address.)

City Long Beach State CA Zip 90808

County Los Angeles County State School Code Number 1964725-6015663

Telephone (562) 421-8421 Fax (562) 420-7654

Web site/URL twain-lbusd-ca.schoolloop.com E-mail eryan@lbschools.net

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

Ellen Ryan Date 1/16/14
(Principal's Signature)

Name of Superintendent* Mr. Christopher Steinhauser
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name* Long Beach Unified School District Tel. (562) 997-8200

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate. This is one of the highest performing green schools in my jurisdiction.

Christopher J. Steinhauser Date January 16, 2014
(Superintendent's Signature)

**Private Schools: If the information requested is not applicable, write N/A in the space.*



PART II – SUMMARY OF ACHIEVEMENTS

Instructions to School Principal

Provide a concise and coherent "snapshot" that describes how your school is representative of your jurisdiction's highest achieving green school efforts in approximately 800 words. Summarize your strengths and accomplishments. Focus on what makes your school worthy of the title U.S. Department of Education Green Ribbon School.

PART III – DOCUMENTATION OF STATE EVALUATION OF NOMINEE

Instructions to Nominating Authority

The Nominating Authority must document schools' high achievement in each of the three ED-GRS Pillars and nine Elements. For each school nominated, please attach documentation in each Pillar and Element. This may be the Authority's application based on the Framework and sample application or a committee's written evaluation of a school in each Pillar and Element.

Nominating Authority's Certifications

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The school has some configuration that includes one or more of grades Pre-K-12. (Schools on the same campus with one principal, even a Pre-K-12 school, must apply as an entire school.)
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating
Agency

California Department of Education

Name of Nominating
Authority

Tom Torlakson, State Superintendent of Public Instruction
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)



I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

Tom Tomlason

Date January 30, 2014

(Nominating Authority's Signature)

The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509
Expiration Date: February 28, 2015

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

PART II – SUMMARY OF ACHIEVEMENTS

Mark Twain Elementary School

Robust recycling programs advance sustainability and wellness

Twain Elementary School was the first school in the Long Beach Unified School District, one of the 50 largest school districts in the country, to start an all-encompassing recycling program. In 2007, a parent realized that all lunchtime waste went straight into the trash can. Since that day, everything changed on campus at Twain. For over six years now, all waste from lunch has been separated between trash and recyclables every day in each of three lunch areas. Parents and Green Team students volunteer daily to help divert trash, reducing lunchtime waste by 85%. Add to that the daily recycling of paper, cardboard, ink cartridges, bottles/cans, and drink pouches/chip bags.

The last Friday of each month is "Bottles and Cans Day," in which students bring bags of collected items from home, earning the school more than \$2,500 annually from recycling bottles, cans, and ink cartridges, and using TerraCycle for harder to recycle items. A drop-off station is set up on the east and west sides of the campus near the valet, and families bring bottles and cans from home. These bags are sorted by parent and student volunteers, before trucks transport the bottles/cans to an on-campus storage container. Recycling income funds school programs that promote the environment and wellness. Twain also runs a uniform reuse program and other drives to help the school and families in surrounding areas. Students and staff celebrated the Center for Green Schools' 2013 National Green Apple Day of Service with a Bottles and Cans Day and garden planting.

Each year, Twain holds a "Fit-A-Thon" fundraiser. Students are sponsored in a day of physical fitness. Prizes, donated by local businesses, are raffled for those who donate, as well as for children who collect the funds. In 2008, with the help of a California State Garden Grant, parents and teachers built a 4,560-square-foot garden. Teachers take their classes to the garden to plant, tend, and harvest.

Twain is an American Heart Association (AHA) Teaching Gardens School. Classes hold "salad parties" and eat vegetables and herbs they have never tasted before. The children learn how hard it is to turn the dirt, and revel in eating what they grow. The garden is an outdoor classroom, incorporating real-life learning into the science, history, literature, math, and social science curriculum, while allowing children to truly understand farm-to-table concepts. They have donated sunflowers to a local Alzheimer's home and donated produce to needy families.

The school garden began with 11 raised garden beds and potted trees, but Phase Two drew in the whole community. The American Institute of Architects (AIA) and a program for at-risk high school students interested in architecture, construction, and engineering teamed together to design and build an entry arch, small benches, and stadium seating made from recycled material, for outdoor instruction. Twain families adopt the school garden for the summer months, to ensure its maintenance.

Twain was chosen by the Long Beach Arts Council for "Eye on Design," in which all 3rd graders teamed up with artists to design public art for the Long Beach Airport, a local park, library, and the Twain Garden. Judges selected the Twain Garden as the winning team, and the project (a globe mosaic sculpture) was recently completed and unveiled to the community.

A Green Team advisor holds a recycling training day for all students at the beginning of the year. They receive instructions for separating their trash and recyclables in an orderly fashion and are educated about the reasons behind Twain's recycling. The Green Team Club has reached 165 members, which is 35% of all eligible students. The afterschool meetings are run by parent volunteers and include instruction on recycling, reusing, packing trash-free lunches, buying in bulk, littering, storm drains, and water conservation. This is followed by crafts made from recycled materials. The Green Team also participates in park clean-ups, beach clean-ups, and Green Days at school.

Students take the Green Team lessons home and inspire change within their families. They ask their parents to get bins for recyclables, teach their families what is recyclable, and learn that the best thing to do is to reduce and reuse. The vast majority of kids are using lunch boxes, thermoses, reusable water bottles, and sandwich containers.

The Twain Green Team has received local media attention for its comprehensive green program, and serves as an ambassador of best practices for other schools in the District. Green Team founders and volunteers have held workshops for other schools, presented at other local workshops, and given campus tours during lunchtime. The Twain recycling program was recognized with the California State PTA Spotlight Award for Environmental Programming in 2012 and featured on National Public Radio's "The Story" in May 2010.

With the goal of educating schools all over the world on becoming "green," the Green Team recently completed a one-year project of creating an educational video entitled "Start Your Own School Recycling Program - It All Starts With Us.":

<http://www.youtube.com/watch?v=oW5W3xjAEaY>

PART III – DOCUMENTATION OF STATE EVALUATION OF DISTRICT NOMINEE

Pillar I: Reduce Environmental Impact and Costs

Element IA: Energy

- The Long Beach Unified School District (LBUSD) has Energy Conservation Guidelines for all school sites as well as regular energy audits.
- Twain received ENERGY STAR certification in 2011 with a score of 97.
- Twain demonstrated a 20.6% reduction in greenhouse gas emissions between March 2003 and December 2013 using data from Energy CAP Program and ENERGY STAR Portfolio Manager. This was calculated over ten years with a population of 665 students and 35 staff. Twain also achieves an additional 69 MTeCO₂ reduction via its 2013-14 recycling efforts (documented using EPA's WARM calculator).
- 21.1% of the energy delivered by Southern California Edison comes from renewable sources.
- Twain participates in the Demand Response Summer Discount Program through Southern California Edison.
- Twain is on the district's ABSOLUTE System, uses programmable thermostats, and has installed T12-T8 and delamping lighting retrofits, resulting in a 60% heat reduction and 60% energy savings. The auditorium lights will be changed to LED in 2014 for a 70% energy savings.

Element IB: Water and Grounds

- The school's water use is 6,493 gallons per person per year. Domestic water use was reduced by 29% from March 2003 to December 2013.
- 100% of the school's landscaping is considered water-efficient and/or regionally appropriate.
- The perimeter of the school has: Pittosporum tobira; Ligustrum-Privet; Hibiscus; Nandina domestica-Heavenly Bamboo; Buxus-Boxwood; Juniperus; and Carissa macrocarpa-Natal palm. The garden has over 11 kinds of flowers, 30 kinds of vegetables, 9 different herbs.
- The 4,560-square-foot garden is paved with decomposed, permeable granite to allow drainage. Twain uses Evapotranspiration (ET) controllers to ensure the grounds are only watered when needed.
- Potable water is 38% ground water, 42% imported, and 6% treated reclaimed; all three sources treat using multi-stage processes, including controlled doses of chlorine and chloramine.
- Lead-containing fixtures have been removed from all LBUSD school sites. Backflow-check valves have been installed and the City of Long Beach Water Department does monthly water quality testing.
- 14.3% of the school grounds are devoted to ecologically beneficial uses. 90,769 square feet are available as outdoor classroom space and are used on a weekly basis. Twain's garden spans 4,560 square feet and includes seasonal vegetables, herbs, fruit trees, butterfly-friendly plants, and native plants.

Element IC: Waste

- 35% of solid waste is diverted from landfilling or incinerating due to reduction, recycling, and/or composting. Waste and recyclables were tracked for a two-week period to establish an average monthly rate.
- Twain obtained a cardboard-only bin from the City of Long Beach, which contributed to Twain's recycling rate increasing to 35% from 25% last year. Styrofoam cafeteria trays and used ink cartridges are recycled. The cafeteria has "share table" to reduce food waste. Green Team sells reusable sandwich/snack bags sewn by parents to reduce plastic bag use. The school Terracycles chip bags and juice pouches.
- Money earned from green fundraisers (bottles and cans drive and Terracycling program) was used to purchase reusable water bottles for each student/staff member in 2008 and 2010.
- The school partners with Sony Corporation and uses parent donations and Scholastic Dollars to stock a Green Team Store full of rewards and prizes for Green Team student volunteers at no cost to the school. Each time Green Team students work their volunteer lunchtime recycling shift, they sign in and out on a sheet at their station to show that they worked. Each student receives a stamp on a personal 3x5 card for every time he/she worked. Three times a year, students redeem their stamped cards for prizes in the Green Team Store.
- 100% of the school's total office/classroom paper content is post-consumer material, fiber from forests certified as responsibly managed, and/or chlorine-free. Teachers use ELMO projectors in lieu of paper copies. Parents can opt for digital version of the school newsletter instead of paper.

- LBUSD's Operations Branch is responsible for the cleaning of district sites. Whenever possible, every effort is made to include green-certified cleaning products in the evaluation and bid process. LBUSD looks for and includes green products in requests for proposals and quotes whenever possible.
- 15-20% of all cleaning products are third-party-certified by Green Seal or the USEPA.
- D.O.G.S. (Dads of Great Students) partner annually with the Community Action Team for beach clean-up.

Element ID: Alternative Transportation

- 14.4% of students walk to school. 3.4% bicycle or skateboard. 43% carpool. 2.4% ride the school bus. 0.6% use other public transportation. This was determined through a survey of 500 of 664 students given by the teachers in the classroom. It is assumed to be representative of the whole school. Percentages exceed totals since some kids use more than one mode and/or use a different mode to vs. from school.
- Twain promotes walking to school with their “Everyday We’re Shuffling” program, which encourages parents and students to walk to school as much as possible to achieve the co-benefits of increased fitness and reduces carbon emissions.
- Twain has well-publicized no-idling policies that applies to all vehicles, vehicle loading/unloading areas at least 25 feet from building intakes, doors, and windows, and secure bicycle storage.
- A map marking the safest routes to school is available. A crossing guard is stationed at the nearby busy intersection. The Parent Handbook has a policy regarding walking/biking/etc. to school. Valet drop-off on both sides of the campus eliminates kids crossing through traffic.
- School buses are only used for special education transportation and field trips, but 35% of LBUSD’s fleet is powered by compressed natural gas. The use of public transit is encouraged; LB Transit’s entire fleet is alternatively fueled or hybrid gas/electric.

Pillar II: Improve the Health and Wellness of Students and Staff

Element IIA: Environmental Health

- The custodial staff inspects the school daily. Staff can also report pest infestation. Pests are handled by custodial staff or by LBUSD Pest Control. When pesticides are used, a written “Pesticide Notice” is filled out and is then stored in the main office. The school has a written Integrated Pest Management (IPM) Plan.
- In 2011-12, there were four applications of pesticides. This is a 60% reduction since 2006-07. Pesticides are only used as needed; there are no routine applications. Non-poison and low-toxicity solutions are sought before applying chemicals.
- The school was intentionally designed with large windows and skylights to provide daylighting and views of the campus. Energy-efficient T-8 or T-12 lighting is available when needed.
- There is a written no-smoking policy and signs are posted. Mercury thermostat switches were replaced by electronic switches and mercury thermometers replaced by alcohol. Gas stoves are inspected annually and earthquake safeguards are in place. The District is in compliance with the Asbestos Hazard Emergency Response Act (AHERA). Radon testing is conducted at all district sites, and the chemical management program covers purchasing.

- All classrooms have good acoustics and lighting. The school is located in a residential area without noise impacts. All classrooms have natural light supplemented by T12-T8 electric lighting retrofits.
- The lead custodian has received training about chemicals on-site and proper handling, including proper personal protection equipment (i.e.: goggles, gloves, masks, eyewashes, etc.). An Injury and Illness Prevention Program is in place. Chemicals are kept in locked storage.
- Twain recently hired its first “Green” head custodian, institutionalizing their green practices for continued success.
- Loose or flaky paint is analyzed for waste characterization and any affected areas are stabilized. If necessary, structures are removed according to identified proper disposal.
- LBUSD follows the U.S. Environmental Protection Agency’s Indoor Air Quality (IAQ) Tools for Schools. For example, to reduce exposure to tobacco smoke, a no-smoking policy is enforced. To eliminate exposure to mold, moisture is controlled. To eliminate dust mites, classrooms are regularly vacuumed. To control pests, LBUSD has an IPM Plan. To improve indoor air quality, LBUSD has a chemical management program to buy, use, and store less toxic products. To decrease impact, students have indoor recess if/when a smog alert is issued.
- The building is inspected regularly for signs of leaks, mold, and moisture. Leaks are addressed at the source. Small leaks are cleaned and dried with fans, mops, dehumidifiers, and extractors as needed. Large jobs are handled by restoration companies. Mold is removed from building and affected material is replaced.
- Merv 8 pleated air filters are replaced twice per year. If the unit requires cleaning, it is performed at that time or when service is requested by the site.

Element IIB: Nutrition and Fitness

- Teachers and students grow, harvest, and cook food from the school garden; Two garden beds are used to grow and donate food for needy families at Twain.
- 100% of students’ P.E. is outside. All classes participate in structured P.E. and daily, supervised outdoor recess. P.E. includes calisthenics, sports instruction, and general fitness. 5th graders participate in Presidential Physical Fitness testing. Parent volunteers run intramural sports at lunch. Twain holds a Fit-A-Thon and Twain Day to encourage fun exercise. More recess time is a common reward for various achievements.
- All grade levels visit the garden weekly to turn dirt, weed, plant, and harvest, and 5th graders manage the work as a Garden Committee, maintaining the garden and assessing the status of their beds as well as the other grade level beds. This includes weeding, checking for plants that are ready for harvest, and sowing in additional seeds after harvesting some plants, since they mature at different rates. The 5th graders took the lead in turning in the new compost in all the garden beds, with the guidance of the Parent Green Team. These 5th grade green leaders pair with 1st graders as “garden buddies.”
- 100% of students and parents receive written notification of sun protection guidelines and policies. Twain families also receive information on nutrition through a partnership with the American Heart Association via articles in the monthly newsletter.
- 20% of food for school lunches is purchased from the USDA and prepared in the District "Scratch Kitchen."
- Teachers visit the school garden weekly and have access to vegetables. The garden committee harvests the community beds and leaves produce in the front office regularly

for any staff to enjoy at home. An instructor has come to talk to faculty about wellness and self-relaxation. Teachers walk together at lunch and have held fitness classes after school. Nutrition Services gives promotions throughout the year, and teachers receive announcements in the weekly bulletin about eating well to share with students.

- Twain uses a Coordinated School Health approach and endeavors to improve health, nutrition, and fitness include while incorporating family, community, and school in the following ways:
 - Fit-A-Thon: The Long Beach City College Men's Volleyball team warms up the students, who then move through relay races and obstacle courses. Donations are solicited from local businesses to serve as prizes for students. This annual event raises approximately \$40,000 each year for the Twain PTA, which funds student educational and enrichment programs.
 - School Garden: The school has taken in donations of soil, compost, seedlings, seeds, trees, plants, mulch, and organic fertilizer from Home Depot, H & H Nursery, Bonnie Plants, Long Beach City College, GroPower, and Masukawa farms.
 - Tar Wars: Long Beach Memorial Medical Center presents an annual youth anti-smoking program for 5th graders.
 - Red-Ribbon Week: On-campus and at-home activities encourage healthy and drug-free living.
 - AHA's Teaching Gardens: A garden-based curriculum promotes healthy eating using the school garden plots and in-class cooking demonstrations. Kids then bring these healthy lessons home.
 - Citizen of the Month: Students who model positive character traits are recognized in front of their peers and families at monthly assemblies.
- Twain partners with: Long Beach Health Department; the Long Beach Alliance for Children with Asthma; American Breathmobile Association; Long Beach Memorial Children's Hospital; Assistance League of Long Beach for school uniforms and orthodontics services; Bright Smiles for dentistry; American Academy of Family Physicians; and Lions Club and Lens Crafters for vision services.
- Twain supports student mental health and school climate with the following programs:
 - The Long Beach Assistance League produces the Kids on the Block anti-bullying assembly.
 - Best Buddies pairs special education and general education students to build tolerance and social skills and promote mainstreaming.
 - Reading Buddies, P.E. Teaming, Music Buddies, and Garden Buddies provide ways for students (special, general, gifted) to interact.
 - School counselors host a New Kid's Lunch. Healthy Response, Divorce, and Friendship Groups provide additional support to students.
 - Disabilities Awareness activities teach sensitivity.
 - Green Slips are given when students are "caught" being kind.

Pillar III: Provide Effective Environmental and Sustainability Education

Element IIIA: Interdisciplinary Learning

- Twain has an environmental literacy requirement. The California Public School standards for science and history detail the overlap between sustainability and curriculum for K-5th grade, with assessments given throughout the learning. On the 2013 California Standards Test-Science, 73% of Twain 5th graders scored proficient or higher.
- First grade teachers attend a workshop called “Erase the Waste” and bring the lessons back to share with other faculty. Heal the Bay and Aquarium of the Pacific provides additional professional development workshops to faculty.

Element IIIB: STEM Content, Knowledge, and Skills

- Twain has its own science fair whose winners move onto the District science fair. Project topics include energy, technology, life science, invention, nutrition, Engineering Design Process, the natural world, and global warming.
- Green Team students learn firsthand how solar heat can be harnessed to potentially replace fossil fuels by using recycled cereal boxes to bake solar-oven S’mores.
- In-class learning activities include:
 - Dyeing fabric using various plant material (like the Native Americans did)
 - Seed math
 - Dyeing carnations to study capillary action in plants
 - Layering soil/sediment and grow grass seeds in terrariums to study erosion
 - Studying city wildlife via magazine/diorama projects with a focus on how humans affect wildlife
 - Studying the root system of plants by growing avocados and potatoes in water
 - Making circuits and batteries to study energy
 - Studying erosion via water and sand labs
 - Learning how the natural environment determined the lifestyles of Native Americans
 - Studying interplay of weather and topography via watershed and water cycle labs
 - Visiting a desalination lab
 - Studying the food chain and the role of decomposers
- On March 20, 2008, education leaders from the Long Beach Unified School District (LBUSD), Long Beach City College (LBCC) and California State University Long Beach (CSULB) signed the Long Beach College Promise. The three education entities promise all LBUSD students the opportunity to receive a college education. The Promise provides a variety of educational benefits and services for Twain students, including student and family outreach services beginning in 4th grade, and continues them through college to ensure college entrance requirements are fulfilled and students are successful. 4th and 5th graders are introduced to green careers and pathways as they are required to visit LBCC and CSULB, both of which offer course work in environmental studies. CSULB offers a B.A., a B.S., and a minor in Environmental Science and Policy. LBCC offers courses in Environmental Science.

Element IIIC: Civic Knowledge and Skills

- Twain’s Green Team is the perfect intersect of civic engagement and sustainability. Over the past six years, the club has grown to over 150 student volunteers and is open to all

2nd through 5th graders. There are eight student volunteers scheduled daily to help their fellow peers sort and recycle their lunchtime waste. They realize that sacrificing a little recess time pays off with a cleaner campus and environment. They also participate in monthly meetings where they further their understanding of why recycling, reducing, and reusing is important to our planet. Green Teamers help in an annual park clean-up, with an over 95% participation rate. All Twain students help in our monthly Bottles/Cans drive. 4th and 5th graders volunteer to help at the morning valet drop-off, which reduces car idling and makes student drop-off safer. Green Team recently elected to donate \$500 of fundraising income to Landfill Harmonic, a group of children from the slum of Cateura, Paraguay who created an orchestra by making instruments out of garbage.

- Twain provides meaningful outdoor learning experiences at every grade level:
 - Kindergarten: Students visit Centennial Farms to learn farming techniques and where food comes from, and the Long Beach Harbor to understand the importance of caring for our waters. Students participate in a walking field trip to Albertsons grocery store, emphasizing fitness and nutrition themes. On-campus science enrichment is provided by Cabrillo Sea Lab (At Home in the Sea).
 - First Grade: Students visit the Redondo Beach Sea Lab to learn how human activity affects sea animals, and the Los Angeles Zoo to study biodiversity.
 - Second Grade: Students visit Crystal Cove to understand how human activity affects sea animals, and Clark Regional Park to study fossils that were found in area while being physically active.
 - Third Grade: Students study ecosystems at the El Dorado Nature Center.
 - Fourth Grade: Students participate in a walking field trip to Long Beach City College as part of the Long Beach College Promise. On-campus science enrichment is provided by Cabrillo Sea Lab (“Shark! It’s OK to go into the Water”).
 - Fifth Grade: Students visit Cal State Long Beach as part of the Long Beach College Promise.
 - Green Team Members (2nd through 5th grades): Students participate in park clean-ups and green crafts outdoors.
 - All students enjoy weekly use of outdoor classroom space and gardens.
- Outdoor learning (the garden) teaches an array of subjects in context. Students learn worm composting in the garden, where they study the plant cycle from seed to plant and back to seed. Students use “garden math” to plan plots and calculate the upcoming harvest. 5th graders harvest the garden and use microscopes to compare plant cells to human cells. The school chorus meets in the garden to sing.
- Bird feeders are placed outside of classrooms to attract wildlife. Bird watching is an excellent application of observational skills.
- The school plants trees in honor of teachers who have passed away or retired.
- Twain was chosen by the Long Beach Arts Council for “Eye on Design,” in which all 3rd graders teamed up with artists to design public art for the Long Beach Airport, a local park, library, and the Twain Garden. Judges selected the Twain Garden as the winning team, and the project (a globe mosaic sculpture) was recently completed and unveiled to the community.
- The school garden began with 11 raised garden beds and potted trees. Phase Two drew in the whole community. The American Institute of Architects (AIA) and a program for at-risk high school students interested in architecture, construction, and engineering (ACE

Program at Jordan HS) teamed together to design and build an entry arch, small benches, and stadium seating (made from recycled material) for outdoor instruction. Long Beach City College's Horticultural Department donated and planted trees and plants. A small shed (repurposed playhouse) was donated, and a hose house was built. The garden dedication was attended by representatives from AIA, ACE, LBCC, the Mayor's office and the City of Long Beach, as well as business donors and Twain garden volunteers. The event was covered by the Long Beach Press Telegram.

- Twain families adopt the school garden for the summer months, to ensure its maintenance.
- The DOGS parent group donates holiday baskets to needy families in the community, modeling civic skills to Twain students.
- Used school uniforms are collected from Twain families and donated to other Long Beach schools with fewer resources.
- LA COUNTY ENVIRONMENTAL DEFENDERS presented the "Rock the Planet" assembly in 2013. Sponsored by the County of Los Angeles Department of Public Works, and performed by two professional children's theatre actors, this fully contained assembly uses music, call and response audience participation, and repetition to effectively communicate the environmental concepts of reduce, reuse, recycle (the Three Rs), storm water pollution prevention, and proper disposal of household hazardous waste.
- Twain leads a community-wide Veteran's Day Celebration with hundreds of veterans and guests. This first-in-district event is covered by live news and local newspapers. Classes perform military and patriotic songs while veterans are invited to speak to classes about their service. Twain also participates in the Long Beach Rescue Mission food drive, Red Ribbon Week, and Miller's Children's Hospital walk.
- Twain participates in local Green Schools Consortium meetings with Los Angeles County and the City of Long Beach to educate other schools on our program. Twain green programs were featured on the front page of Long Beach Press Telegram on Earth Day. Although the school's green efforts began as strictly parent-led, volunteers worked hard for years to work out the kinks, bring their lessons to the district level, and develop it into something sustainable.



(Left, from top) Students volunteer for beach cleanup; Getting active in the Fit-a-Thon; Veterans' Day celebration; Service at the Alzheimer's Home. (Above, from top) Garden mosaic; Students fill reusable water bottles.