FINAL REPORT

Educating the Future: Innovative Resource Conservation Strategies

LADWP Outreach and Community Partnerships Program:
Grants for School-Based Educational Activities by Non-Profit Organizations

A Program of the Los Angeles Department of Water and Power
Submitted by:

The Bay Foundation
July 27, 2017

Authors: Rodney C. Abbott
Melodie Grubbs
Renee Maser

GRANT INSTALLMENT REQUEST (GIR)

School-Based Community Organizations for
Educational Partnership Program 2016

Date:	September 28, 2017
Organization:	Santa Monica Bay Restoration Foundation (dba The Bay Foundation)
Project Name and Council District:	School-Based Community Organizations for Educational Partnership Program 2016
Contact Name/Phone:	Rod Abbott / (310) 873-3956
Tax ID No.:	330420271
Work Order No:	_____

Milestone Payment Requested (mark one):
22% Progress ____; 61% Progress _____; 100% Final __X___

Section A: Summary Page

Through *Educating the Future: Innovative Resource Conservation Strategies*, The Bay Foundation (TBF) developed and conducted a series of tasks aimed to promote energy, water, and natural gas conservation within Los Angeles Unified School District (LAUSD) middle-schools. This report summarizes both successes and challenges and provides recommendations for future educational outreach strategies. Activities took place between 14 March 2016 and 31 May 2017. Products developed for this project include a high-quality educational video, three infographics, two-story maps, and an activity packet for classroom and home use. All materials are available at no cost and can be found on http://www.santamonicabay.org/energy-and-water-conservation/.

To achieve program objectives, an innovative educational conservation program was designed and produced with a "two-tiered" outreach approach. The Tier-1 approach involved TBF staff directly engaging LAUSD teachers and students in 13 classrooms split between 3 schools about conservation needs and solutions. The Tier-2 approach extended TBF efforts through broad-scale outreach via websites, newsletters, a press release, and additional online media and social media sources. TBF used a diverse array of educational and outreach strategies to achieve objectives including developing an educational conservation video, conservation infographics, interactive story maps, in-classroom games and activities, conservation worksheets, a dedicated project website, quantitative surveys, social media posts and a press release.

Through this project, TBF directly engaged 286 students and seven teachers from three LAUSD schools through in-classroom visits and presentations. A project dedicated website has made all material available to educators, parents, and students citywide and at no cost, and a press release and online news sources have helped promote the program further.

Section B: Project Description

The focus of this project was aimed at educating youth, the future generation, with innovative resource conservation strategies. Being more than just an education project, project goals included instilling a sense of stewardship and helping youth to develop conservation habits that will last a lifetime. Building on its experience in watershed management, conservation education, and implementation of hands-on conservation projects both large and small, TBF produced a suite of engaging water and energy conservation tools for LAUSD middle school teachers, students, and parents that promote water and energy conservation. The tools can be used in part, as a complete package, or adapted as needed. This report summarizes both successes and challenges and provides recommendations for further development and expansion of this program. Program development began in the summer of 2016 through spring of 2017 and program implementation, and in-classroom visits occurred from March 2017 to May 2017. All the materials and tools are freely available to the public through a designated website hosted on the TBF website (Appendix A).

Educational materials developed as part of this project include: 1) Energy and Water Conservation Survey, 2) LA Water and Energy Conservation Video for Kids, 3) Infographics, Activity Packet, and creative and fun conservation-related giveaways 4) In-Class Activities, 5) Interactive Water and Energy Story Maps, 6) Project Website, 7) Social Media, 8) Press Release, 9) Media, and 10) Classroom Presentations. Details for each activity can be found below.

1) **Energy and Water Conservation Survey:** To assess attitudes and practices of energy and water conservation by middle school students in LAUSD (6^{th} – 8^{th} grade), an online survey was developed and a link made available to teachers for the students. Students were asked to take the first survey before TBF conducted the initial classroom visit, and to take a follow-up survey before the second visit, about a month a later. A total of 148 students responded to the 1^{st} survey and 94 students responded to the 2^{nd} survey (Appendix B).
    - *Date range*: 9 March 2017 – 7 May 2017
2) **LA Water and Energy Conservation Educational Video for Kids:** To highlight Los Angeles water and energy issues and the role LADWP plays, a professional educational video was produced. The video included interviews with Jim Yannotta, Manager of LA Aqueduct (LADWP); Dr. Jeremy Pal, LMU professor and Noble Peace Prize laureate; Melodie Grubbs, Watershed Programs Manager (TBF); Nancy Sutley, Chief Sustainability and Economic Development Office (LADWP) and former White House aide; and Dr. Stephanie Pincetl, UCLA professor and Director of California Center for Sustainable Communities (Appendix C). The video was posted on YouTube 17 March 2017, and shown in classroom visits beginning 15 March 2017. The video will be maintained and available for viewing on TBF's YouTube site.
    - *Date range: 14 March 2017 to present*
3) **Materials:** To engage, entertain, and educate middle school students, a suite of water and energy conservation materials were produced including:

- **Infographics:** Three detailed and visually appealing infographics were created with a regional emphasis on water (Appendix D), energy (Appendix E), and climate change (Appendix F). Large, professionally mounted versions were printed for classroom display, and high-resolution versions are included in the Game Card + Activity Packet (Appendix G).
- **Activity Packet/Game Card:** A collection of ten (10) activities that focus on water, energy, and conservation topics that students can complete in the classroom and/or at home were developed. As an incentive, the activity packet was used in classrooms as a "game card." As students completed activities they earned a corresponding "badge" listed on the front of the activity packet. TBF used these badges as entries into a raffle for prizes. Teachers have the flexibility to easily modify the "game card" system to reward for points, prizes, or grade credit. The activity packet and associated badges include the following: 1) "Water Knowledge Badge," 2) "Water Search Badge," 3) "Water Footprint Badge," 4) "Water Device Badge," 5) "Energy Knowledge Badge," 6) "Energy Nap Badge," 7) "Energy Footprint Badge," 8) "Water Story Map Badge," 9) "Conservation Art Badge," and 10) "Adult Survey Badge" (Appendix G). Although these activities were designed to accompany the educational video, infographics, and story maps for a complete set of educational tools, they can be used separately as needed by the educator, parent and/or student.
- **Giveaways**: Each student received a LADWP bag that contained an activity packet, a native "Seed Bomb" packet (Appendix H, #5), and two silicone bracelets engraved with "Save Water / Save LA" and "Save Energy / Save LA" (Appendix H, #4).
- *Date range: Developed September 2016 – March 2017; presented 14 March 2017 – 15 May 2017*

2) **In-class Activities – *The First Visit*:** The first classroom visits began by showing students the "LA Water and Energy Conservation for Kids" video produced for this grant. Hosted by a talented young teenager named Kenya, the nearly 12 minute video features interviews with LA-based experts in water, energy, and climate change issues. After the video presenters set up a Jeopardy™-themed game with categories titled *Water*, *Energy*, and *Climate Change*. Instead of dollars for points, currency was in *drops* for water, *watts* for energy, and *clouds* for climate change (Appendix I). An in-class game was not originally part of the grant proposal, but was added as a vehicle for classroom discussion and group participation. Finally, the "Activity Packets/Game Card" was explained and students were instructed that they had about four weeks to complete the 10 activities and collect the corresponding badges. Each verified badge would be placed in a container and function as a raffle ticket for individual and class prizes. As students departed class, each was given a green LADWP bag filled with the activity packet, a "Seed Bomb," and two silicone bracelets. Students were also given an inflatable globe, symbolizing Earth Day and the importance of conservation.

***The Second Visit*:** Scheduled about four weeks later**,** the second visit was originally about collecting badges and giving out prizes. Once it was realized that would not take the entire class period, innovative educational science kits were purchased for the students to assemble in small teams in class. Students especially liked the "Salt Water-Powered Robot" and "Solar Rover," and presenters used the kits as a way to demonstrate alternative energy (Appendix H, #1 and #3).

A popular kit with GALS LA 6th-graders was the "Grow n Glow Terrarium." Assembled just before Earth Day (April 22, 2017), the terrarium provided an opportunity to discuss the Earth's atmosphere and the role of greenhouse gases (Appendix H, #2).

- *Date range*: *First Visits - 14 March 2017 – 3 April 2017; Second Visits – 18 April 2017 – 15 May 2017*

3) **Water and Energy Interactive Story Maps:** Two interactive web-based story maps were created that focused on water and energy in Los Angeles. The first web-based story map, "The Story of Water in Los Angeles," begins by exploring the history of water in Los Angeles back to original aqueduct system, the Zanja Madre, and development of the Owens Valley, California, and Colorado River aqueducts. Interactive maps include the state average annual precipitation overlaid by aqueduct systems that lead into Los Angeles and a map that allows the user to explore average monthly residential water use by zip code (LADWP data source) (Appendix J). The second web-based story map, "Save Energy, Save LA," has interactive maps featuring household energy use in Los Angeles and the various types of energy sources (e.g., power plants, solar, etc.) that power Los Angeles (Appendix K). Each map integrated geographic information systems (GIS) datasets, videos, graphics, and web links.
   - *Date range: 1 February 2017 – 31 May 2017 (available on the project website)*
4) **Project Website:** Hosted on TBF's website, "Water and Energy Conservation for LA Middle School Students" (website), is *the* portal for all the materials developed for this grant as well as conservation materials developed from other grants (Appendix A).
   - *Date range: April 23, 2017 – May 31, 2017 (hosted on TBF's website)*
5) **Social Media:** Twenty-six (26) LADWP-inspired conservation messages and links were posted on TBF's Twitter (@SMBRF) account from 21 January 2017 through 12 May 2017. Conservation messages included simple ways to save water and energy and many of LADWP's rebates and conservation incentives (Appendix L).
   - *Date range: January 20, 2017 – May 12, 2017*
6) **Press Release:** On 18 May 2017, TBF issued a press release after the website for the project went live (Appendix M).
   - *Date range: released 18 May 2017*
7) **Media**: After the TBF press release, WestsideToday.com (Appendix N) posted two stories: "Bay Foundation Offers 6th-8th Graders, Teachers Free Tools to Check and Change Conservation Habits" (19 May 2017) and "Conservation Tech for Kids" (9 June 2017). In May 2017, the

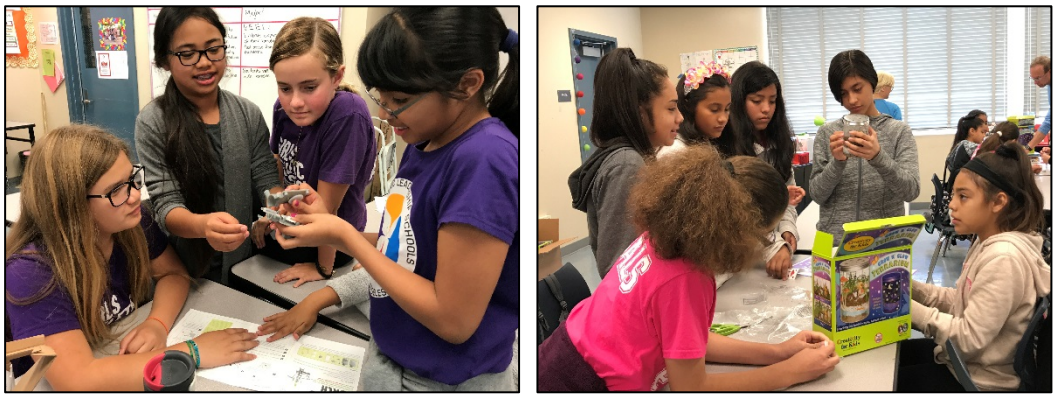
Baywire, the quarterly newsletter of the Santa Monica Bay National Estuary Program, featured the project with the headline "Conservation through Education" and linked the website, the video, and LADWP's website (Appendix O). Although not media per se, after receiving the press release, City of Rancho Palos Verdes Councilman Ken Dyda emailed TBF's Communications Director writing, "Thanks for the information. It is a great program." (Dated 22 May 2017).

- *Date range: 19 May 2017 and 9 June 2017*

8) **Classroom Presentations:** TBF visited 13 classrooms from three middle schools in LAUSD to engage students in energy and water conservation topics and present educational material developed as part of the program. Schools included the Girls Athletic Leadership School (GALS LA), Los Angeles Academy of Arts & Enterprise (LAAAE), and Thomas Alva Edison Middle School (TAE). GALS LA and LAAAE classrooms were visited twice and TAE Middle School only once. TAE was selected toward the end of the grant and a suitable second visit could not be scheduled. In anticipating only one visit to TAE, TBF presenters modified the agenda to combine the best activities from usual 1st and 2nd classroom visit agendas to maximize impact on the students. In total, TBF conducted 23 classroom visits, 10 classrooms being visited twice, and engaged 286 individual students and teachers during the grant program (Table 1).

Table 1. Classroom Presentations Statistics

Date	School	Grade Level(s)	# of Classrooms Visited	# of Students + Teachers
3/14/2017	Girls Athletic Leadership School	6th	4	85
4/3/2017	Los Angeles Academy of Arts & Enterprise	6th, 7th, and 8th	6	111
4/18/2017	Girls Athletic Leadership School	6th	4	85
5/5/2017	Edison Middle School	6th, 7th, and 8th	3	90
5/15/2017	Los Angeles Academy of Arts & Enterprise	6th, 7th, and 8th	6	111



One GALS LA class assembles a kit (left), while another assembles a terrarium (right).

Section C: Project Evaluation

Goals and Targets

The primary goal of this project was to produce a suite of water and energy conservation materials that would be engaging, entertaining, and educational, and then present and test the materials in at least ten (10) classrooms split between two or more LAUSD middle schools. Despite some challenges that will be discussed in the next section, all goals and targets were met and the materials have been made freely available on a designated TBF hosted website (Appendix A). All materials can be found in the appendices and Table 2 summarizes the number of individuals reached and directly engaged through this project. Goals and targets are summarized by specific milestones in the following sections.

Table 2. Summary of number of people outreached and actively engaged by activity.

Activity	# of Individuals Reached	# of Individuals Engaged
Classroom Visits	482	482
Outreach Event – (*Nickelodeon Studios*)	650	132
Educational Video *(YouTube)*	940	42
Educational Video *(classrooms)*	293	293
Interactive Story Maps *(2)*	524	524
Website Page	9,748	72
TBF Social Media	23,865	303
Media	30,600	3,060
Press Releases	600	240
Newsletters	800	80
Total	**68,502**	**5,228**

Goals and Targets Summarized by Milestone

Milestone #1: Finalize Contracts: Complete

On 23 August 2016, the contract and MOU between TBF and LADWP was finalized for LADWP's School-Based Community Organizations for Educational Partnership Program. Shortly after, TBF developed a Request for Proposals (RFP) for a part-time *Conservation Outreach Assistant* to aid in project related tasks. The RFP was released, aimed at recruiting upper level undergraduate students, graduate students, or recent graduates. A qualified candidate was chosen from the applicant pool. On 14 November 2016, TBF finalized a contract with LMU graduate Renee Maser (Environmental Science, B.S.) for the position

of *Conservation Outreach Assistant*. The *Conservation Outreach Assistant* role aided TBF in the facilitation of project related activities, focusing on material development, classroom recruitment, and in-class presentations and activities. Her contract ended on 31 May 2017 after successful completion of the grant.

Milestone #2: Develop Program Details: Complete

In August 2016, the milestones, timeline, and budget were clarified and revised with input from LADWP staff. TBF kicked off the grant activities by conducting a series of internal project meetings to determine the best course of action and to prioritize and develop timelines for all project activities. On 18 November 2016, TBF participated in an LADWP webinar for the School-Based Partnership Program to meet other grantees, discuss timelines, review work and reimbursement processes, and learn about available resources. TBF drafted and finalized a social survey for students, which was eventually used to assess and track student attitudes about water and energy use and conservation and whether beneficial behavior change occurred because of the program. (Appendix B).

Milestone #3: Develop Curriculum: Complete

TBF conducted significant background research on the targeted age range, 6th-8th grade, and assembled a series of ten activities to include as part of a "game card" or activity packet (Appendix G). The "game card" activities focused on water, energy, and conservation topics which students completed both in the classroom and at home to earn entries into prize drawings. Each completed activity earned the student a corresponding "badge," marked complete by entering their first name and last initial in a box and submitting the completed activity to their teacher or TBF staff. During the second classroom visit, each completed badge was removed from the game card and placed in a box eligible for prize drawings. Students who completed the most activities had a greater chance of winning a prize.

The activity associated badges include the following: 1) "Water Knowledge Badge," 2) "Water Search Badge," 3) "Water Footprint Badge," 4) "Water Device Badge," 5) "Energy Knowledge Badge," 6) "Energy Nap Badge," 7) "Energy Footprint Badge," 8) "Water Story Map Badge," 9) "Conservation Art Badge," and 10) "Adult Survey Badge." Each of the badges along with descriptions and the activities themselves are presented in Appendix G. The variety of learning methods allow for a diverse set of information to be presented to the students, with a focus on energy and water conservation in a fun and interactive manner. Activities accompany the water and energy conservation educational video, infographics, and story maps to provide a complete set of educational materials; however, activities and materials have the flexibility to be used individually or in varied combinations.

Three detailed and visually appealing infographics were created with a regional emphasis on water (Appendix D), energy (Appendix E), and climate change (Appendix F). Large, professionally mounted versions were printed for classroom display, and high-resolution versions are included in the Activity Packet/Game Card (Appendix G).

A list of water and energy conservation social media messages were compiled and posted biweekly on TBF social media (i.e. Twitter) starting on 20 January 2017 and through 12 May 2017 (Appendix L).

In the search for LAUSD middle school classrooms, TBF developed a selection criteria which considered demographics, ethnic diversity, school rankings, and specific school-based focus such as science or art magnets. From these, three primary and four back-up schools were selected. Seven schools were initially contacted by phone with a detailed project information email sent as follow-up. Unfortunately, none of the schools contacted through this method returned TBF's phone calls or responded to emails. Concerned about staying on schedule, instead of "cold calling" more middle schools, TBF began engaging partners and reaching out broadly to other contacts for direct referrals to additional middle schools. From this effort, three schools were contacted which lead to organizing classroom visits at the Girls Athletic Leadership School Los Angeles (GALS LA) in Panorama City (four classrooms) and Los Angeles Academy of Arts & Enterprise (LAAAE) located on the Roybal Learning Center Campus (six classrooms). The third school contacted was Belvedere Middle School in East Los Angeles, although the teacher showed interest program a firm commitment could not be made. In late April 2017, a teacher from Thomas Alva Edison (TAE) Middle School asked if we could present in three of their classrooms. Because of scheduling conflicts and the end of the school year nearing a second visit was not possible. Between GALS LA, LAEEE, and TAE, TBF conducted visits to 13 classrooms, with 286 individual students between 6th and 8th grade.

Milestone #4: Interactive Story Maps: Complete

Two interactive web-based story maps that integrate geographic information systems (GIS) datasets, videos, graphics, and weblinks were created that focus on water and energy in Los Angeles (Appendix J and Appendix Kbelow). These story maps have been integrated into the suite of educational materials that TBF has presented to middle school classrooms and will continue to remain online for educators and students to explore. The first web-based story map, The Story of Water in Los Angeles, begins by exploring the history of water in Los Angeles back to original aqueduct system, the Zanja Madre, and development of the Owens Valley, California, and Colorado River aqueduct. Interactive maps in the water story map include the state average annual precipitation overlaid by aqueduct systems that lead into Los Angeles and a map that allows the user to explore average monthly residential water use by zip code (LADWP data source). The second web-based story map, Save Energy Save LA, allows the user to explore interactive maps showing household energy use in Los Angeles and the various types of energy sources (power plants) in and around Los Angeles.

The Story of Water in Los Angeles map was developed prior to the Save Energy Save LA map and was published on 1 February 2017. From 1 February 2017 to 31 May 2017 the Story of Water in Los Angeles map received 482 unique views, an average of 3.65 views per day. Usage of the water story map peaked immediately following publication and during the periods near in-classroom visits. The Save Energy Save LA map was published on 29 March 2017, and from 29 March 2017 to 31 March 2017 the site received 42 unique views, an average of 0.67 views per day (Figure 1).

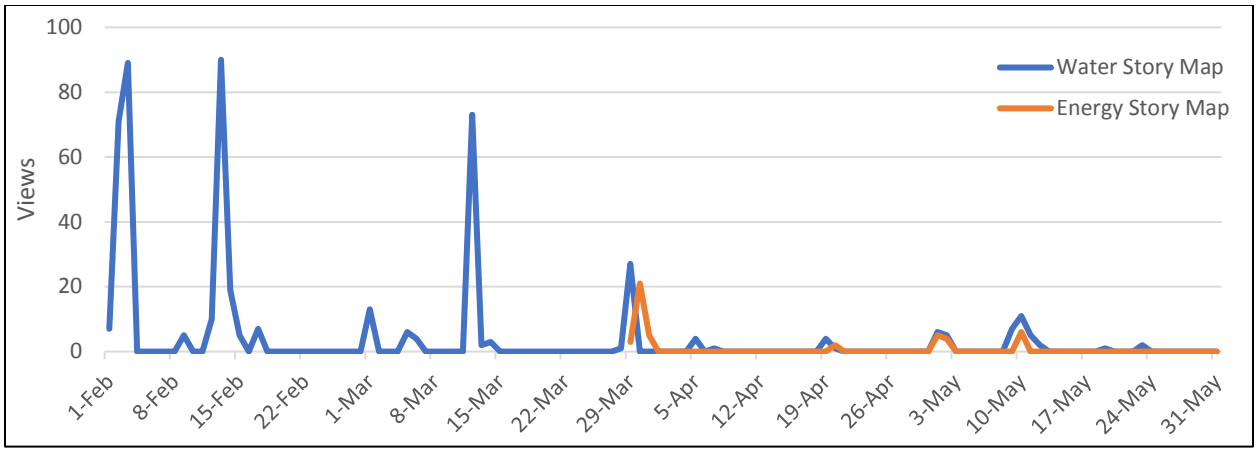


Figure 1. Story map usage statistics (01 Feb 17 – 13 June 17).

Milestone #5: Develop and Produce Instructional Video: Complete

Xlantic, Inc. wrote, edited, and produced a high-quality engaging water and energy conservation video with middle school aged kids in mind. The nearly 12-minute video is hosted by a talented teenager named Kenya and stylishly presents many of the water and energy issues facing Los Angeles and innovative solutions LADWP is implementing. Interviews in the video include: Jim Yannotta, Manager of LA Aqueduct (LADWP); Dr. Jeremy Pal, LMU professor and Noble Peace Prize laureate; Melodie Grubbs, Watershed Programs Manager (TBF); Nancy Sutley, Chief Sustainability and Economic Development Office (LADWP) and former White House aide; and Dr. Stephanie Pincetl, UCLA professor and Director of California Center for Sustainable Communities (Appendix C).

A separate "Discussion Guide" was originally intended to accompany the video, but through the development of activities and materials, including the full suite of products that can be found on the website (Appendix A), it was determined that the interactive activities were much better at engaging the students and teachers in the learning process than just a written guide. Many of the elements explored in the video are elaborated in significant detail in the infographics, story maps, and Activity Packet/Game Card.

Milestone #6: Post Materials to Website: Complete

In May 2017, all materials developed for this grant were posted on a designated website available to schools, students, parents, and the public at large at no charge. TBF will continue to refine materials and promote them through its social media, outreach events, and at restoration events to continue and expand its Tier-2 influence (Appendix A).

Milestone #7: Classroom Presentations: Complete

Between March and May 2017, TBF staff visited 13 classrooms from three LAUSD middle schools located in Panorama City, downtown Los Angeles, and South Los Angeles (Table 3). With the exception of the all-girls GALS LA, there were slightly more males than females and nearly all student demographics were represented as Hispanic. Average monthly residential water usage, in the zip code area of each school, varied from 13.13 HCF to 24.31 HCF (Figure 3).

Table 3. Middle school information and demographics.

		Demographics				Average Residential Water Use (by Zip Code, 2012)
LAUSD School	**Address**	**Female**	**Male**	**Hispanic**	**Students from low-income families:**	
Girls Athletic Leadership School (GALS LA) – Charter	15040 Roscoe Blvd., Panorama City, CA 91402	100%	0%	n/a	n/a	24.31 HCF
Los Angeles Academy of Arts and Enterprise – Charter	1200 W. Colton Street, Los Angeles, CA 90026	49%	51%	98%	97%	14.84 HCF
Thomas A. Edison Middle School	6500 Hooper Avenue, Los Angeles, CA 90001	48%	52%	97%	99%	13.13 HCF

Figure 2. GALS LA students watch the educational video produced for this grant.

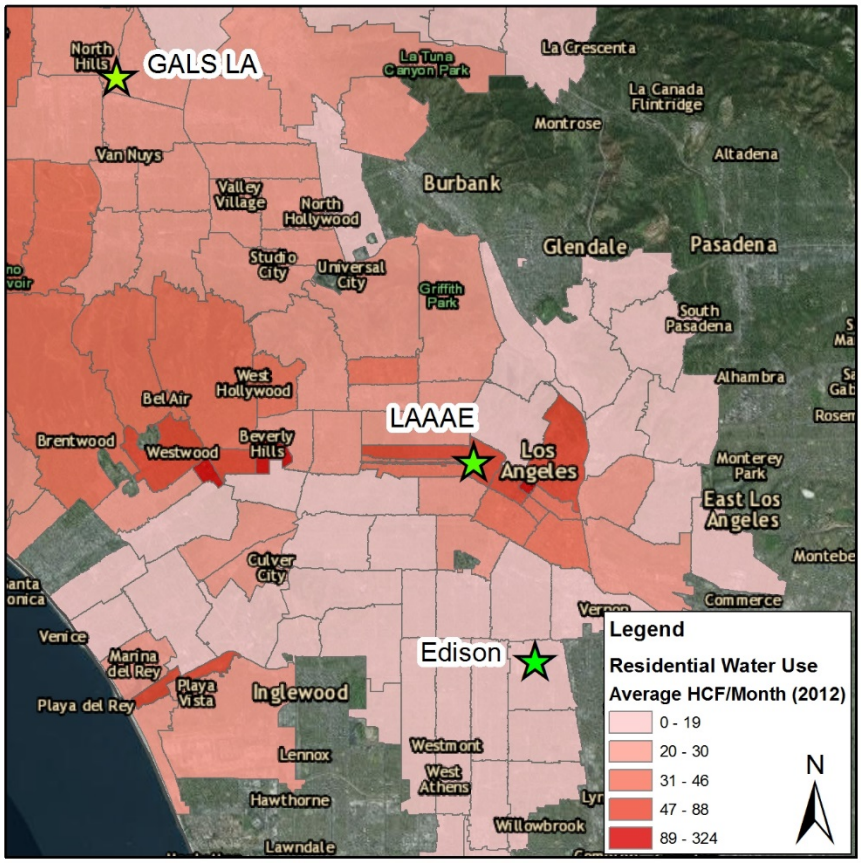


Figure 3. Map of LAUSD middle schools visited and 2012 average monthly residential water use by zip code (Water Use Data Source: LADWP).

On 14 March 2017, TBF staff gave its first classroom presentation at GALS LA to four sixth grade classrooms of approximately 25 female students each. Although demographics were not collected, the majority of students were Hispanic. Each class was shown the informational video (Figure 2), then divided into teams to play a Jeopardy™-inspired game with categories for Water, Energy, and Climate Change. Each category has five questions in increasing difficulty from 100 to 500 points. The students showed excitement for the game and eagerly, and at times rambunctiously, competed to see who could answer the quickest. Overall, students did quite well and maintained focus and engagement. After the game, the class was presented with the Game Card/Activity Packet to be completed in the classroom and at home before the next TBF visit. Students thoroughly enjoyed the game and knew many of the answers, or at least close approximations. The teachers also loved the materials and showed interest in reproducing the classroom game for future classes. Since the Jeopardy™-inspired game was not an original milestone, we are finalizing an instruction manual that teachers can use to build their own game board. The 2nd visit to the GALS LA School was conducted on 18 April 2017. TBF opportunistically leveraged Earth Day, and topics for the second visit included recapping on water and energy conservation, group activities including building miniature terrariums, solar powered robots, and miniature wind-turbines.

On 3 April 2017, TBF presented to six classrooms at LAAAE at the Roybal Learning Center in Downtown LA. Classrooms included boys and girls in 6th, 7th, and 8th grades. The students were predominately Hispanic and some were English Second Language (ESL) learners. The presentation followed the same pattern as the GALS LA visit – video, Jeopardy™-inspired game, and Game Card/Activity Packet instructions. The students at this school were a little more boisterous and inattentive, but on the whole student engagement was good, and the teachers were grateful and looked forward to our return visit. On 15 May 2017, TBF visited the six classrooms at LAAAE again, recapping on water and energy conservation, collecting Game Card/Activity Packets, and engaging the students with a hands-on group activity.

On 5 May 2017, TBF presented to three classrooms at Edison Middle School in South Central LA. Classroom activities were customized based on individual class periods and time allotted. The first classroom was a long period (1.75 hours) with 6th grade students and TBF presented the informational video, engaged in discussion about water and energy conservation, played the Jeopardy™-inspired game, conducted a hands-on activity, and provided instructions for the Game Card/Activity Packet. The following two classrooms were shorter periods with 7th and 8th graders and a hands-on activity and standard presentation with the video, discussion, and Game Card/Activity Packet instructions was given. The Jeopardy™-inspired game was not conducted in the latter two classrooms. Students learned about renewable energy and built solar powered rovers and saltwater powered robots. The students were very engaged in building the rovers and robots and the classes culminated with tremendous excitement where groups raced their creations outside.

Milestone #7: Additional Outreach Activities: Complete

From 20 January 2017 through 12 May 2017, in an effort to target Tier-2 consumers, nearly thirty water and energy conservation messages were posted on TBF's Twitter account (Appendix L). Messages featured mostly LADWP-related rebates and incentives, tips on simple ways to use less water and energy, and continued use of some of the conservation materials produced for another LADWP grant in 2015 such as its award winning PSA "Desert Delivery" (https://youtu.be/IC3yX253Y2k).

The average engagement rate for the social media campaign was 2.61%, well above the 1% average for social media in general. The three conservation messages below had an extraordinary engagement rates ranging from 6% to as high as 21%.

"Fix that Drip! Calculate how much a leaking faucet wastes @ladwp https://t.co/Mse1hHZFuD" (21% engagement rate)

"We love and need the rain but conservation isn't over! @LADWP @EPA https://t.co/fGs8pmcciS" (7% engagement rate)

"It falls from the sky, but most of our water is a 'Desert Delivery' @LADWP https://t.co/gCnfIsrloX" (6% engagement rate)

Social Survey Analyses

Methods

In an effort to gauge student attitudes about water conservation, energy conservation, and climate change, TBF developed a social survey that was distributed to students via teacher prior to visiting the classroom and again approximately four weeks after the first visit but just prior to the second visit. The purpose of the post classroom visit was to determine if student attitudes and behavior had changed after classroom presentations and completion of the take-home activity packet. The pre- and post-visit surveys were essentially identical, based on a modified Likert-type scale, and consisted of a series of statements that required the students to respond by indicating whether he or she strongly agrees, agrees, is not sure, disagrees, strongly disagrees, or the option to not answer. Post-surveys included supplemental information in which students could rank the classroom visits and activities and include comments about the program. The surveys were created in Survey Monkey and a special link was emailed to the teachers who provided computers to the students for completion (Appendix B).

Results

Pre- and post- classroom visit surveys were made available to students through their teacher for both the GALS LA and LAAAE classrooms. Edison Middle School classrooms were not provided with the survey as they were visited only once due to short notice in scheduling and being towards the end of the grant cycle and school year. Between GALS LA and LAAAE, a total of 148 students responded to the 1st survey and 94 students responded to the 2nd survey. The following section breaks down survey results by the GALS LA and LAAAE schools. The surveys were not paired to an individual student and the number of students that completed the 1st survey varied from the 2nd survey. In all, more students participated in the 1st survey and less participated in the 2nd survey, likely due to the teacher making the survey optional for students.

GALS LA survey results

From the classrooms that participated in the program, 85 students completed the 1st survey and 46 students completed the 2nd survey. The student responses to water conservation issues in the pre-visit survey included a large percentage of students (45.9%) answering “not sure” to the statement “I already conserve water”, while 48.2% answered “strongly agree” or “agree” (Table 4, Figure 5). The post-visit survey showed a lower percentage of students answering “not sure” and a higher percentage of students answering “agree” indicating that students’ behavior towards water conservation may have shifted following classroom visits (Table 5, Figure 6). In the post-visit survey, a higher percentage of students disagreed to the statement, “I am too young to conserve water,” and agreed to the statement, “I can conserve water if I want to,” compared to the pre-visit survey. These survey results show positive trends that students may feel more empowered and understand that they can take action conserving water following classroom visits and activity completion. Interestingly, a high proportion of students were still “not sure” how to estimate their daily water usage. Calculating water usage in gallons per day can be challenging and these results show that simplifying the process and corresponding math needed to calculate water usage may need to be improved or modified depending on grade level.

Student responses to energy conservation survey statements showed positive trends when comparing pre- and post-visit surveys. A higher percentage of students, 91.3%, agreed that "It's easy to turn off unused electronics" in the post-visit survey compared to the pre-visit survey where 71.8% students agreed (Table 6, Figure 7). A higher proportion of students "disagreed" to the statement "I normally don't conserve energy" in the 2nd survey compared to the 1st survey, indicating a positive behavior trend following classroom visits. Additionally, more students agreed to the statement "In school I learned about the importance of energy conservation and climate change" in the 2nd survey (89.1%) versus the 1st survey (80%) indicating that classroom presentations and activities had a positive impact in communicating this subject to students.

Student responses to climate change statements also showed positive results with a higher percent of students agreeing to the statement "I will do my part to stop climate change," 65.9% of students agreed with this statement during the 1st survey rising to 80.4% in the 2nd survey (Table 8, Figure 9). The "not sure" response for "I know what my carbon footprint is" and "I have been trying to reduce my carbon footprint through conservation" remained high for both the 1st and 2nd surveys, indicating that like calculating water usage per day, the concept of calculating carbon footprint and methods of teaching could be improved. In all, survey responses to climate change statement saw the least change from the 1st survey to the 2nd when compared to water and energy conservation responses.

The post-classroom visit survey also included various questions about specific activities in the education handouts, feedback on the program in general, and the opportunity for students to leave comments. This feedback was extremely helpful to gauge interest and opinion from the students' perspective and can be used to improve the program. From the 46 GALS LA students that participated in the 2nd survey, 44.4% identified that the word search activity in the packet was their favorite activity (Figure 4). The crossword activity was the 2nd next favorite, with 33.3% of students choosing this activity as their favorite. The least favorite activity identified by the GALS LA students was the online water/energy calculator (32.6%) and the water story map (26.1%).

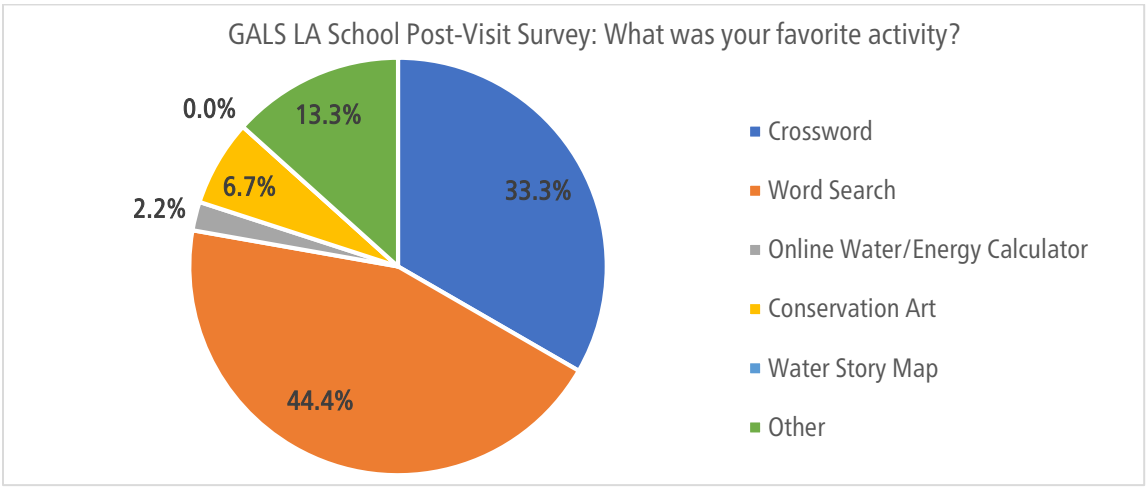


Figure 4. GALS LA School post-visit survey response to favorite activity.

The majority of students agreed that the program was fun and that they learned new things. Many students also agreed that they were surprised by how much water and electricity they used. Open-ended responses to the program by students included some of the following statements:

"I AM COOL AND I SAVE WATER MEE TOO!"

"I cannot wait for you guys to come again"

"Can we play the game again? PWEEZ?"

"This was actually pretty fun but just wanted to ask if you are going to visit us again when we are in 7th or 8th grade"

"This exercise was cool and I think that everyone should have a chance to learn these things."

"This program was very fun and I loved it even though the packet was a little confusing."

"I loved it"

"Yes I will stop using a lot of water and more things to stop."

Table 4. Pre-classroom visit survey results from the GALS LA School – Water Conservation.

	What do you think about water conservation? (GALS LA: Pre-Visit Survey)							
Responses	Using more water than you need is wasteful.	I don't like taking shorter showers.	I learned in school about water conservation.	I can estimate how many gallons of water I use a day.	I am too young to conserve water.	I can conserve water if I want to.	I don't think it's important to conserve water.	I already conserve water.
Strongly Agree	68.2% (58)	24.7% (21)	18.8% (16)	7.1% (6)	5.9% (5)	29.4% (25)	4.7% (4)	24.7% (21)
Agree	24.7% (21)	25.9% (22)	44.7% (38)	23.5% (20)	7.1% (6)	35.3% (30)	3.5% (3)	23.5% (20)
Not Sure	4.7% (4)	23.5% (20)	23.5% (20)	54.1% (46)	31.8% (27)	23.5% (20)	23.5% (20)	45.9% (39)
Disagree	0% (0)	9.4% (8)	3.5% (3)	11.8% (10)	12.9% (11)	4.7% (4)	21.2% (18)	3.5% (3)
Strongly Disagree	2.4% (2)	14.1% (12)	4.7% (4)	3.5% (3)	41.2% (35)	4.7% (4)	43.5% (37)	0% (0)
No Response	0% (0)	2.4% (2)	4.7% (4)	0% (0)	1.2% (1)	2.4% (2)	3.5% (3)	2.4% (2)
Total Responses	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)

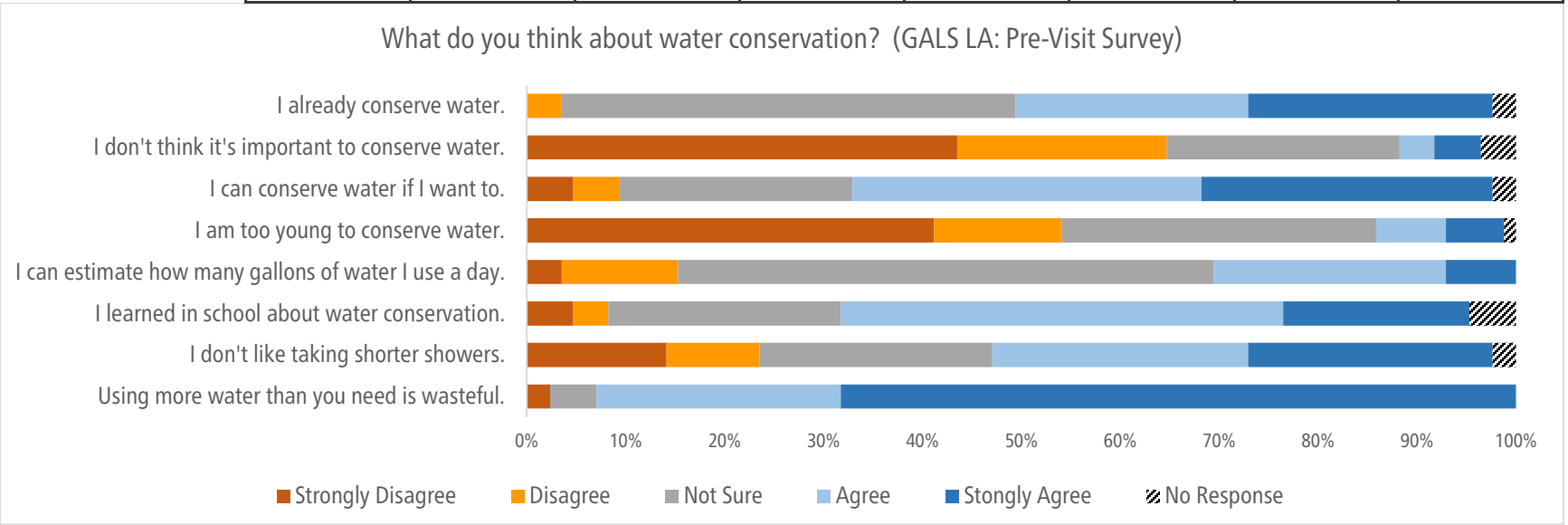


Figure 5. Pre-classroom visit survey results from the GALS LA School – Water Conservation.

Table 5. Post-classroom visit survey results from the GALS LA School – Water Conservation.

	After participating in the program, what do you think about water conservation now?							
Responses	Using more water than you need is wasteful.	I don't like taking shorter showers.	I learned in school about water conservation.	I can estimate how many gallons of water I use a day.	I am too young to conserve water.	I can conserve water if I want to.	I don't think it's important to conserve water.	I already conserve water.
Strongly Agree	67.4% (31)	17.4% (8)	26.1% (12)	4.3% (2)	0% (0)	47.8% (22)	2.2% (1)	21.7% (10)
Agree	21.7% (10)	15.2% (7)	58.7% (27)	13.0% (6)	4.3% (2)	30.4% (14)	6.5% (3)	52.2% (24)
Not Sure	8.7% (4)	28.3% (13)	8.7% (4)	50.0% (23)	10.9% (5)	10.9% (5)	4.3% (2)	17.4% (8)
Disagree	0% (0)	23.9% (11)	2.2% (1)	15.2% (7)	30.4% (14)	0% (0)	19.6% (9)	4.3% (2)
Strongly Disagree	0% (0)	15.2% (7)	2.2% (1)	17.4% (8)	54.3% (25)	8.7% (4)	65.2% (30)	2.2% (1)
No Response	2.2% (1)	0% (0)	2.2% (1)	0% (0)	0% (0)	2.2% (1)	2.2% (1)	2.2% (1)
Total Responses	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)

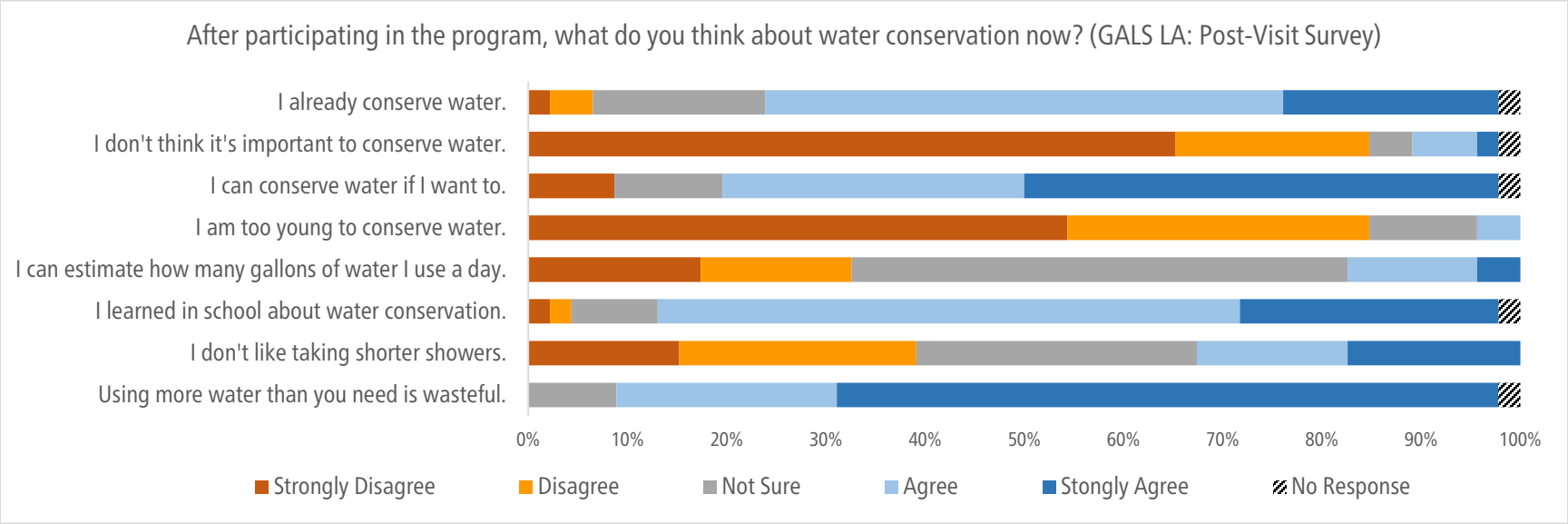


Figure 6. Post-classroom visit survey results from the GALS LA School – Water Conservation.

Table 6. Pre-classroom visit survey results from the GALS LA School – Energy Conservation.

	What do you think about energy conservation? (GALS LA: Pre-Visit Survey)							
Responses	Turning off unused lights is important.	Saving energy, saves money and the Earth.	In school I learned about the importance of energy conservation and climate change.	I see people around me conserve electricity.	It's easy to turn off unused electronics.	I get upset when I'm told to turn something off.	I will try to remember to turn off the light when I leave a room.	I normally don't conserve energy.
Strongly Agree	62.4% (53)	55.3% (47)	37.6% (32)	16.5% (14)	35.3% (30)	16.5% (14)	56.5% (48)	3.5% (3)
Agree	29.4% (25)	35.3% (30)	42.4% (36)	34.1% (29)	36.5% (31)	16.5% (14)	27.1% (23)	8.2% (7)
Not Sure	4.7% (4)	5.9% (5)	16.5% (14)	34.1% (29)	16.5% (14)	20.0% (17)	11.8% (10)	41.2% (35)
Disagree	1.2% (1)	0% (0)	2.4% (2)	11.8% (10)	4.7% (4)	31.8% (27)	1.2% (1)	27.1% (23)
Strongly Disagree	2.4% (2)	2.4% (2)	1.2% (1)	3.5% (3)	3.5% (3)	15.3% (13)	2.4% (2)	20.0% (17)
No Response	0% (0)	1.2% (1)	0% (0)	0% (0)	3.5% (3)	0% (0)	1.2% (1)	0% (0)
Total Responses	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)

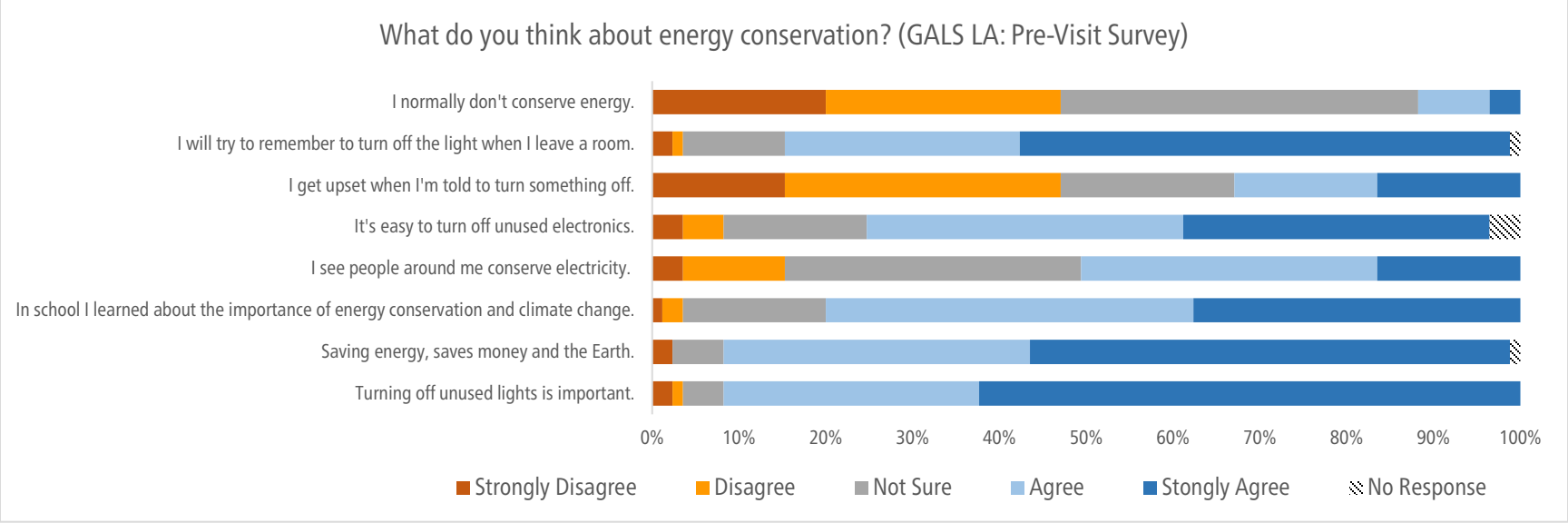


Figure 7. Pre-classroom visit survey results from the GALS LA School – Energy Conservation.

Table 7. Post-classroom visit survey results from the GALS LA School – Energy Conservation.

	After participating in the program, what do you think about energy conservation now?							
Responses	Turning off unused lights is important.	Saving energy, saves money and the Earth.	In school I learned about the importance of energy conservation and climate change.	I see people around me conserve electricity.	It's easy to turn off unused electronics.	I get upset when I'm told to turn something off.	I will try to remember to turn off the light when I leave a room.	I normally don't conserve energy.
Strongly Agree	60.9% (28)	60.9% (28)	41.3% (19)	23.9% (11)	47.8% (22)	10.9% (5)	58.7% (27)	2.2% (1)
Agree	34.8% (16)	28.3% (13)	47.8% (22)	28.3% (13)	43.5% (20)	8.7% (4)	37.0% (17)	8.7% (4)
Not Sure	4.3% (2)	6.5% (3)	8.7% (4)	41.3% (19)	8.7% (4)	21.7% (10)	2.2% (1)	26.1% (12)
Disagree	0% (0)	0% (0)	2.2% (1)	6.5% (3)	0% (0)	43.5% (20)	0.0% (0)	41.3% (19)
Strongly Disagree	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	15.2% (7)	2.2% (1)	21.7% (10)
No Response	0% (0)	4.3% (2)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
Total Responses	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)

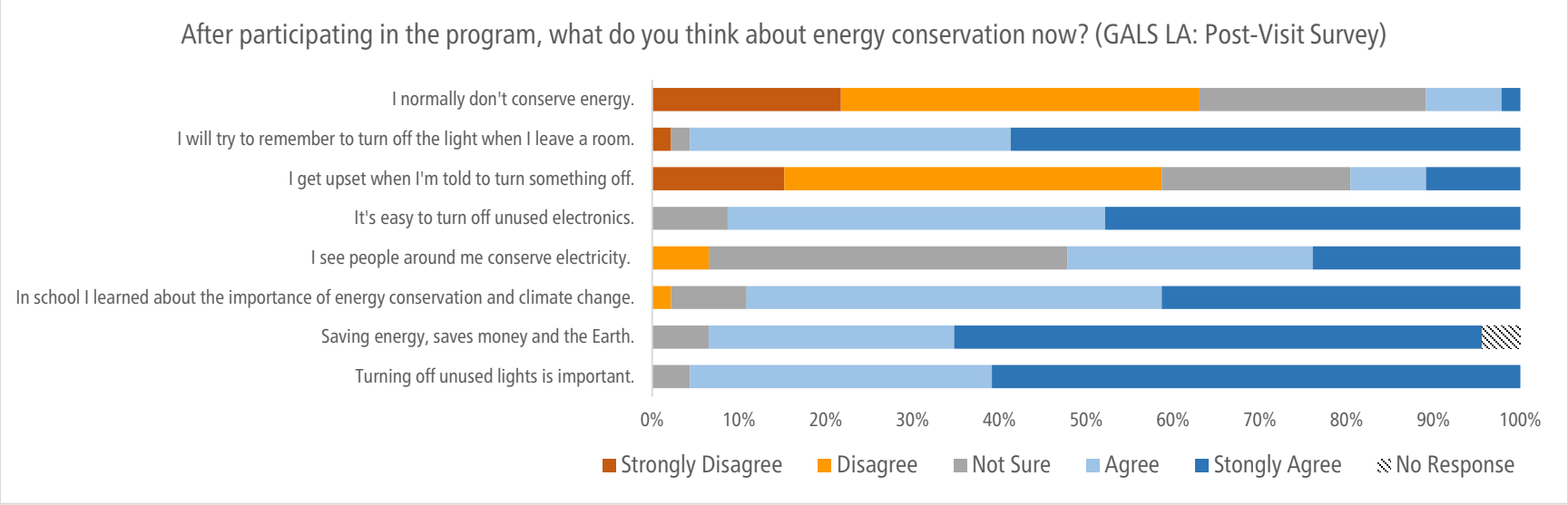


Figure 8. Post-classroom visit survey results from the GALS LA School – Energy Conservation.

Table 8. Pre-classroom visit survey results from the GALS LA School – Climate Change.

	What do you think about climate change? (GALS LA: Pre-Visit Survey)									
Responses	Modern climate change is caused by humans (anthropogenic).	Some of the effects of climate change are scary.	I have learned how climate change will increase drought in Southern California.	I have learned ways to reduce the effects of climate change.	I talked with my friends about climate change.	I don't think there is anything I can do to stop it.	I don't think there is anything I can do to stop it.	I will do my part to stop climate change.	I know what my carbon footprint is.	I have been trying to reduce my carbon footprint through conservation.
Strongly Agree	32.9% (28)	38.8% (33)	23.5% (20)	22.4% (19)	17.6% (15)	7.1% (6)	21.2% (18)	35.3% (30)	7.1% (6)	9.4% (8)
Agree	29.4% (25)	40.0% (34)	36.5% (31)	36.5% (31)	27.1% (23)	10.6% (9)	31.8% (27)	30.6% (26)	10.6% (9)	8.2% (7)
Not Sure	35.3% (30)	18.8% (16)	36.5% (31)	36.5% (31)	16.5% (14)	38.8% (33)	40.0% (34)	34.1% (29)	58.8% (50)	70.6% (60)
Disagree	2.4% (2)	2.4% (2)	3.5% (3)	4.7% (4)	22.4% (19)	23.5% (20)	4.7% (4)	0% (0)	11.8% (10)	7.1% (6)
Strongly Disagree	0% (0)	0% (0)	0% (0)	0% (0)	14.1% (12)	20.0% (17)	1.2% (1)	0% (0)	10.6% (9)	4.7% (4)
No Response	0% (0)	0% (0)	0% (0)	0% (0)	2.4% (2)	0% (0)	1.2% (1)	0% (0)	1.2% (1)	0% (0)
Total Responses	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)	100% (85)

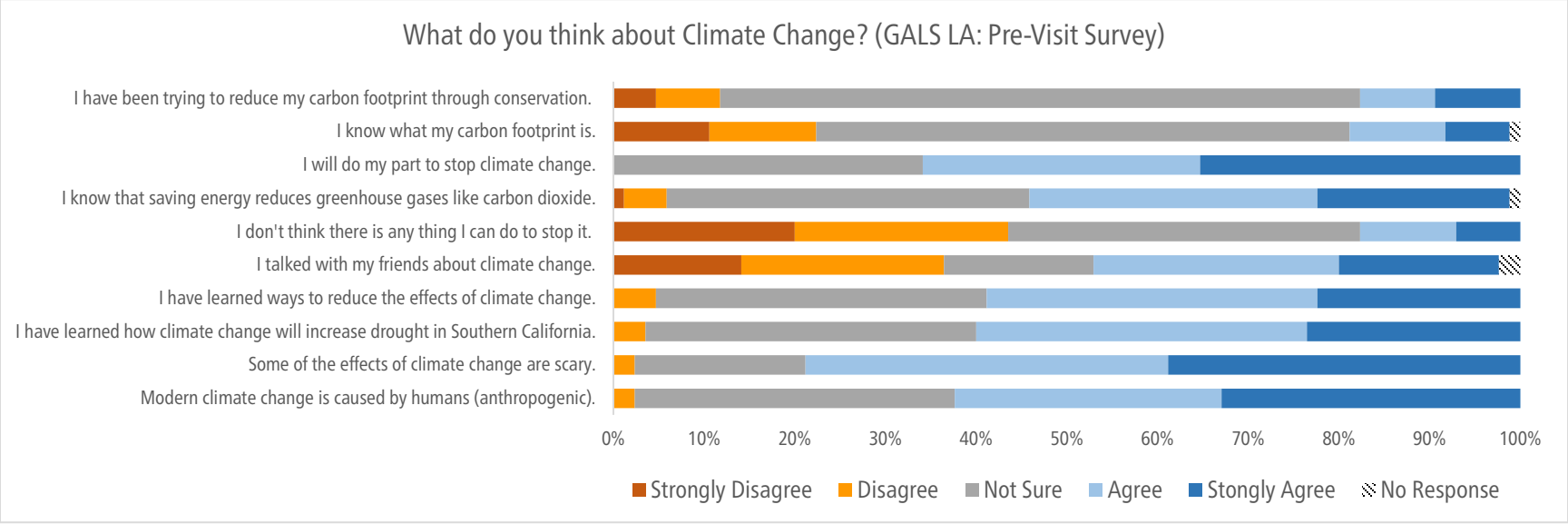


Figure 9. Pre-classroom visit survey results from the GALS LA School – Climate Change.

Table 9. Post-classroom visit survey results from the GALS LA School – Climate Change.

	After participating in the program, what do you think about climate change now?									
Responses	Modern climate change is caused by humans (anthropogenic).	Some of the effects of climate change are scary.	I have learned how climate change will increase drought in Southern California.	I have learned ways to reduce the effects of climate change.	I talked with my friends about climate change.	I don't think there is anything I can do to stop it.	I don't think there is anything I can do to stop it.	I will do my part to stop climate change.	I know what my carbon footprint is.	I have been trying to reduce my carbon footprint through conservation.
Strongly Agree	26.1% (12)	34.8% (16)	15.2% (7)	28.3% (13)	8.7% (4)	2.2% (1)	19.6% (9)	30.4% (14)	6.5% (3)	8.7% (4)
Agree	26.1% (12)	39.1% (18)	50.0% (23)	47.8% (22)	17.4% (8)	8.7% (4)	39.1% (18)	50.0% (23)	17.4% (8)	8.7% (4)
Not Sure	45.7% (21)	21.7% (10)	34.8% (16)	21.7% (10)	26.1% (12)	23.9% (11)	34.8% (16)	13.0% (6)	58.7% (27)	71.7% (33)
Disagree	2.2% (1)	4.3% (2)	0% (0)	2.2% (1)	32.6% (15)	30.4% (14)	4.3% (2)	4.3% (2)	13.0% (6)	10.9% (5)
Strongly Disagree	0% (0)	0% (0)	0% (0)	0% (0)	15.2% (7)	26.1% (12)	0% (0)	2.2% (1)	4.3% (2)	0% (0)
No Response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	8.7% (4)	2.2% (1)	0% (0)	0% (0)	0% (0)
Total Responses	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)

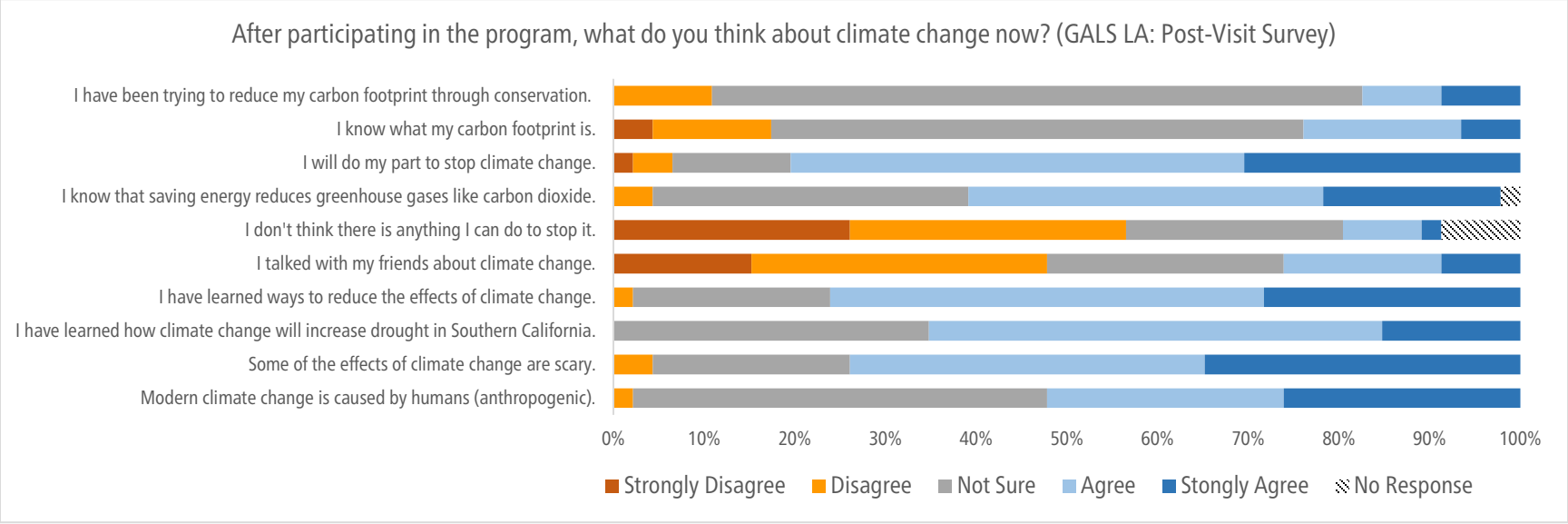


Figure 10. Post-classroom visit survey results from the GALS LA School – Climate Change.

LAAAE survey results

From the classrooms that participated in the program, 65 students completed the 1st survey and 45 students completed the 2nd survey. The results from the 1st survey show that while 52.4% of students agreed that they already conserve water, nearly a third of the students were unsure (Table 10, Figure 12). Similar results were seen in the 2nd survey in response to the statement "I already conserve water" with less students disagreeing and most students unsure (Table 11, Figure 13). In general, pre- and post-classroom visit surveys did not show any significant changes in responses.

A high percentage of students responded "not sure" to the energy conservation statements, "I see people around me conserve electricity" and "I normally don't conserve energy" (Table 12, Figure 14). Students responded neutral or positive in both surveys for the "Saving energy, saves money, and the Earth" statement with no students disagreeing to the statement. Additionally, the majority of students felt it was easy to turn off unused electronics in both the pre- and post-classroom visit surveys (Table 13, Figure 15).

A high percentage of students responded "not sure" to all climate change related statements (Table 14 and Table 15, Figure 16 and Figure 17). Interestingly, some post-visit classroom trends show minimal change or even a decrease in responses that we would expect to be increasing following the 1st classrooms visit. Language barriers may have played a role in student responses as many students responded "not sure" to questions. Additionally, the number of students who participated in the 1st survey was higher than the 2nd, which may have skewed comparing results.

The post-classroom visit survey also included various questions about specific activities in the education handouts, feedback on the program in general, and the opportunity for students to leave comments. This feedback was extremely helpful to gauge interest and opinion from the students' perspective and can be used to improve the program. Like the GALS LA School results, students from the LAAAE seemed to favor the word search (38.3%) and crossword activity (14.9%) the most, and the online water/energy calculator (20.8%) and water story map (25%) the least (Figure 11).

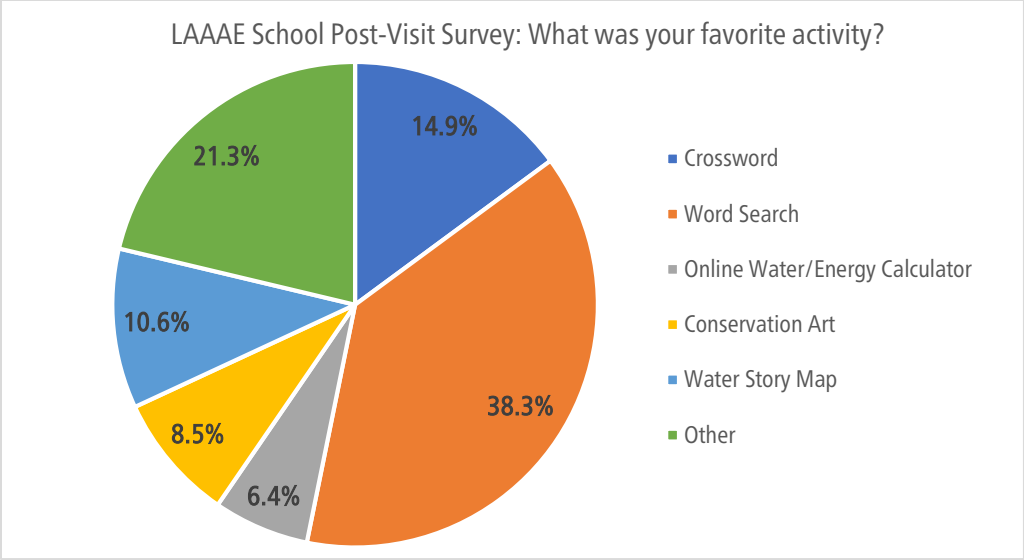


Figure 11. LAAAE School post-visit survey response to favorite activity.

While the GALS LA School consisted of all female, 6th graders, those from LAAAE who took the post-visit survey were primarily 8th graders (16 in 6th grade and 31 in 8th grade) with 24 students identifying as female and 23 students as male. About half of the LAAAE students agreed that the program was fun and that they learned new things, the other students that responded were mainly unsure.

Open-ended responses to the program by students included some of the following statements:

"Great job and thank you for teaching me the importance for saving water."

"Great job and thank you for teaching me new stuff!!! This program is awesome!!!"

Table 10. Pre-classroom visit survey results from the LAAAE School – Water Conservation.

	What do you think about water conservation? (LAAAE LA: Pre-Visit Survey)							
Responses	Using more water than you need is wasteful.	I don't like taking shorter showers.	I learned in school about water conservation.	I can estimate how many gallons of water I use a day.	I am too young to conserve water.	I can conserve water if I want to.	I don't think it's important to conserve water.	I already conserve water.
Strongly Agree	54.0% (34)	11.1% (7)	33.3% (21)	7.9% (5)	0% (0)	31.7% (20)	3.2% (2)	11.1% (7)
Agree	23.8% (15)	34.9% (22)	50.8% (32)	14.3% (9)	9.5% (6)	30.2% (19)	11.1% (7)	41.3% (26)
Not Sure	17.5% (11)	30.2% (19)	9.5% (6)	58.7% (37)	30.2% (19)	23.8% (15)	19.0% (12)	30.2% (19)
Disagree	3.2% (2)	12.7% (8)	1.6% (1)	11.1% (7)	31.7% (20)	7.9% (5)	15.9% (10)	11.1% (7)
Strongly Disagree	1.6% (1)	9.5% (6)	3.2% (2)	6.3% (4)	25.4% (16)	6.3% (4)	47.6% (30)	1.6% (1)
No Response	0% (0)	1.6% (1)	1.6% (1)	1.6% (1)	3.2% (2)	0% (0)	3.2% (2)	4.8% (3)
Total Responses	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)

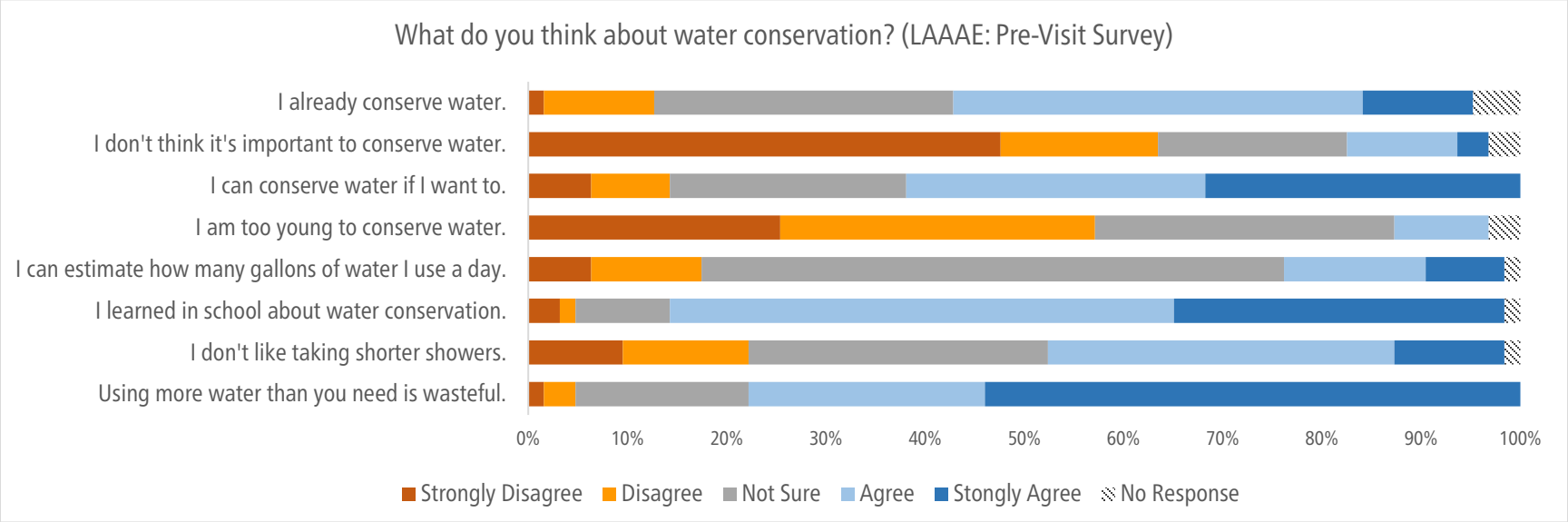


Figure 12. Pre-classroom visit survey results from the LAAAE School – Water Conservation.

Table 11. Post-classroom visit survey results from the LAAAE School – Water Conservation.

	After participating in the program, what do you think about water conservation now?							
Responses	Using more water than you need is wasteful.	I don't like taking shorter showers.	I learned in school about water conservation.	I can estimate how many gallons of water I use a day.	I am too young to conserve water.	I can conserve water if I want to.	I don't think it's important to conserve water.	I already conserve water.
Strongly Agree	37.5% (18)	10.4% (5)	18.8% (9)	0% (0)	2.1% (1)	20.8% (10)	6.3% (3)	8.3% (4)
Agree	37.5% (18)	25.0% (12)	41.7% (20)	22.9% (11)	12.5% (6)	37.5% (18)	8.3% (4)	39.6% (19)
Not Sure	16.7% (8)	54.2% (26)	29.2% (14)	47.9% (23)	33.3% (16)	29.2% (14)	18.8% (9)	45.8% (22)
Disagree	6.3% (3)	8.3% (4)	8.3% (4)	18.8% (9)	29.2% (14)	4.2% (2)	33.3% (16)	4.2% (2)
Strongly Disagree	2.1% (1)	2.1% (1)	2.1% (1)	10.4% (5)	22.9% (11)	8.3% (4)	31.3% (15)	0% (0)
No Response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	2.1% (1)	2.1% (1)
Total Responses	100% (45)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)	100% (46)

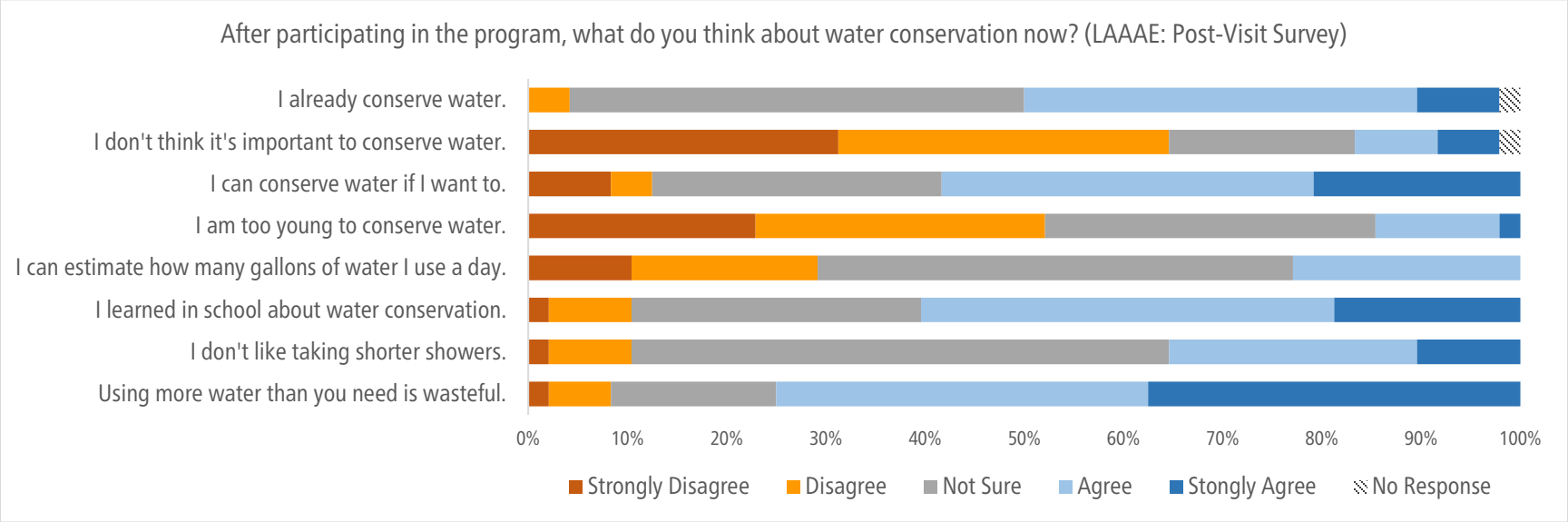


Figure 13. Post-classroom visit survey results from the LAAAE School – Water Conservation.

Table 12. Pre-classroom visit survey results from the LAAAE School – Energy Conservation.

	What do you think about energy conservation? (LAAAE: Pre-Visit Survey)							
Responses	Turning off unused lights is important.	Saving energy, saves money and the Earth.	In school I learned about the importance of energy conservation and climate change.	I see people around me conserve electricity.	It's easy to turn off unused electronics.	I get upset when I'm told to turn something off.	I will try to remember to turn off the light when I leave a room.	I normally don't conserve energy.
Strongly Agree	48.4% (30)	53.2% (33)	32.3% (20)	9.7% (6)	38.7% (24)	14.5% (9)	43.5% (27)	1.6% (1)
Agree	41.9% (26)	35.5% (22)	48.4% (30)	25.8% (16)	45.2% (28)	16.1% (10)	43.5% (27)	14.5% (9)
Not Sure	9.7% (6)	11.3% (7)	14.5% (9)	51.6% (32)	12.9% (8)	21.0% (13)	9.7% (6)	37.1% (23)
Disagree	0% (0)	0% (0)	4.8% (3)	11.3% (7)	1.6% (1)	27.4% (17)	1.6% (1)	27.4% (17)
Strongly Disagree	0% (0)	0% (0)	0% (0)	1.6% (1)	1.6% (1)	21.0% (13)	0% (0)	17.7% (11)
No Response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1.6% (1)	1.6% (1)
Total Responses	100% (62)	100% (62)	100% (62)	100% (62)	100% (62)	100% (62)	100% (62)	100% (62)

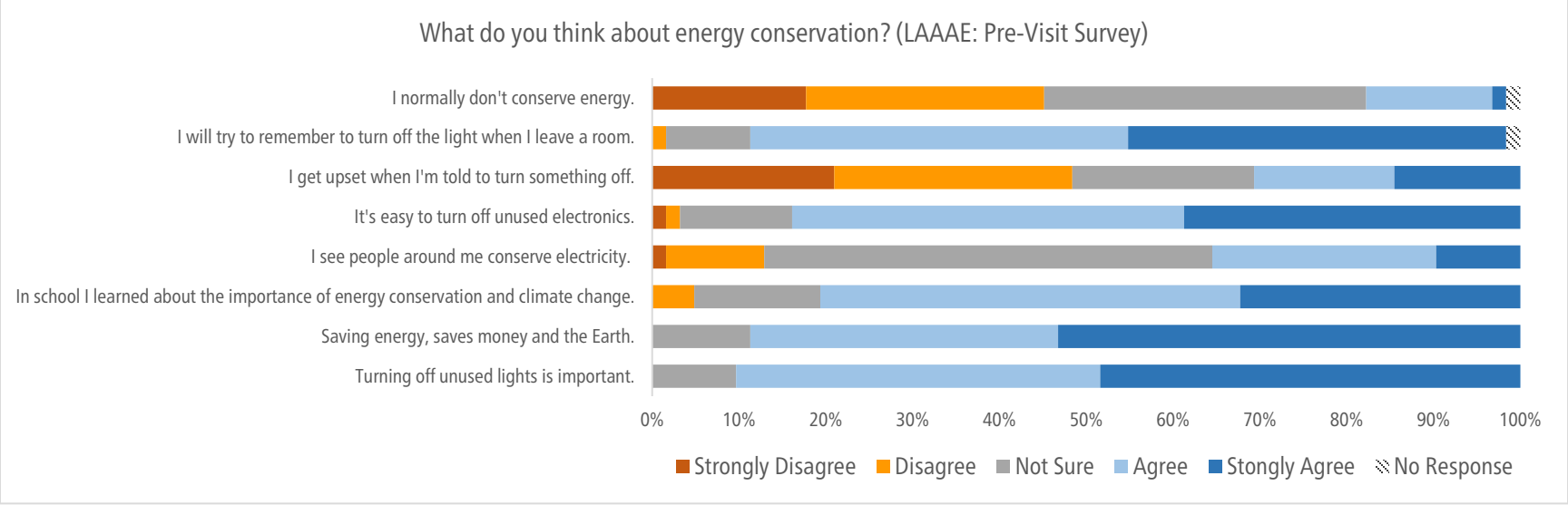


Figure 14. Pre-classroom visit survey results from the LAAAE School – Energy Conservation.

Table 13. Post-classroom visit survey results from the LAAAE School – Energy Conservation.

	After participating in the program, what do you think about energy conservation now?							
Responses	Turning off unused lights is important.	Saving energy, saves money and the Earth.	In school I learned about the importance of energy conservation and climate change.	I see people around me conserve electricity.	It's easy to turn off unused electronics.	I get upset when I'm told to turn something off.	I will try to remember to turn off the light when I leave a room.	I normally don't conserve energy.
Strongly Agree	35.4% (17)	20.8% (10)	14.6% (7)	14.6% (7)	27.1% (13)	2.1% (1)	22.9% (11)	2.1% (1)
Agree	52.1% (25)	60.4% (29)	45.8% (22)	22.9% (11)	41.7% (20)	18.8% (9)	52.1% (25)	12.5% (6)
Not Sure	10.4% (5)	18.8% (9)	35.4% (17)	56.3% (27)	27.1% (13)	35.4% (17)	20.8% (10)	60.4% (29)
Disagree	2.1% (1)	0% (0)	2.1% (1)	6.3% (3)	0% (0)	16.7% (8)	2.1% (1)	20.8% (10)
Strongly Disagree	0% (0)	0% (0)	2.1% (1)	0% (0)	0% (0)	22.9% (11)	0% (0)	2.1% (1)
No Response	0% (0)	0% (0)	0% (0)	0% (0)	4.2% (2)	4.2% (2)	2.1% (1)	2.1% (1)
Total Responses	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)

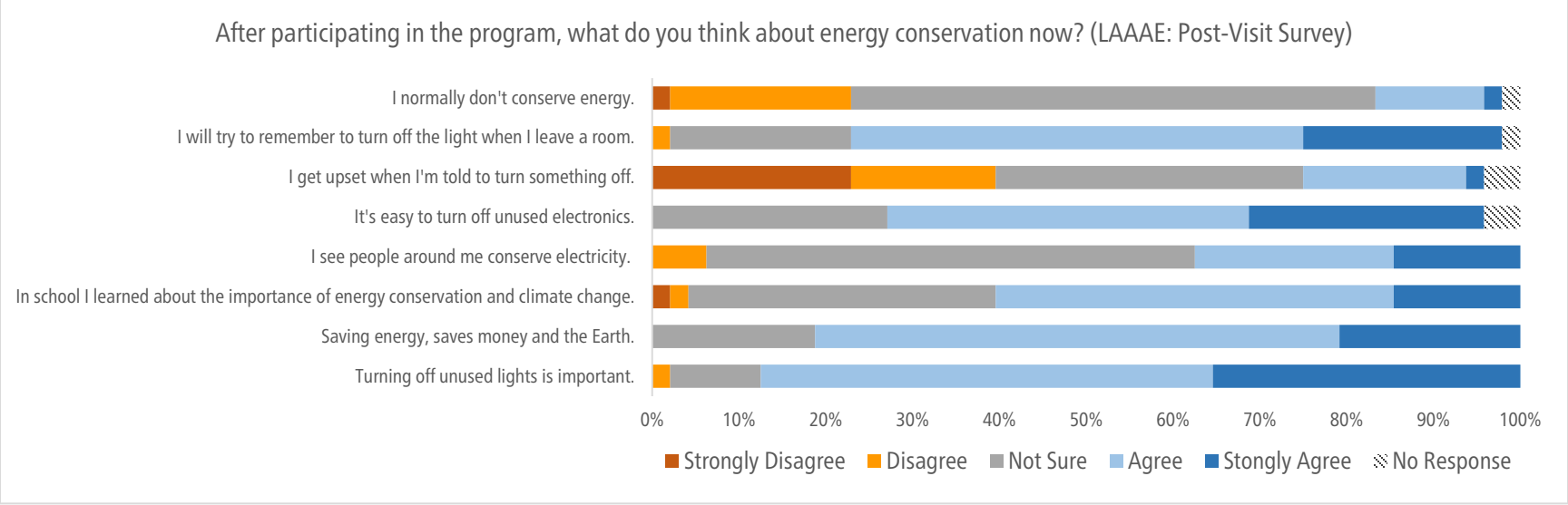


Figure 15. Post-classroom visit survey results from the LAAAE School – Energy Conservation.

Table 14. Pre-classroom visit survey results from the LAAAE School – Climate Change.

	What do you think about climate change? (LAAAE: Pre-Visit Survey)									
Responses	Modern climate change is caused by humans (anthropogenic).	Some of the effects of climate change are scary.	I have learned how climate change will increase drought in Southern California.	I have learned ways to reduce the effects of climate change.	I talked with my friends about climate change.	I don't think there is anything I can do to stop it.	I don't think there is anything I can do to stop it.	I will do my part to stop climate change.	I know what my carbon footprint is.	I have been trying to reduce my carbon footprint through conservation.
Strongly Agree	22.2% (14)	25.4% (16)	19.0% (12)	23.8% (15)	12.7% (8)	6.3% (4)	17.5% (11)	22.2% (14)	7.9% (5)	6.3% (4)
Agree	39.7% (25)	38.1% (24)	30.2% (19)	41.3% (26)	17.5% (11)	19.0% (12)	47.6% (30)	46.0% (29)	17.5% (11)	15.9% (10)
Not Sure	34.9% (22)	30.2% (19)	49.2% (31)	30.2% (19)	28.6% (18)	46.0% (29)	34.9% (22)	28.6% (18)	60.3% (38)	69.8% (44)
Disagree	3.2% (2)	4.8% (3)	0% (0)	3.2% (2)	19.0% (12)	17.5% (11)	0% (0)	1.6% (1)	6.3% (4)	6.3% (4)
Strongly Disagree	0% (0)	0% (0)	0% (0)	1.6% (1)	22.2% (14)	11.1% (7)	0% (0)	0% (0)	6.3% (4)	0% (0)
No Response	0% (0)	1.6% (1)	1.6% (1)	0% (0)	0% (0)	0% (0)	0% (0)	1.6% (1)	1.6% (1)	1.6% (1)
Total Responses	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)	100% (63)

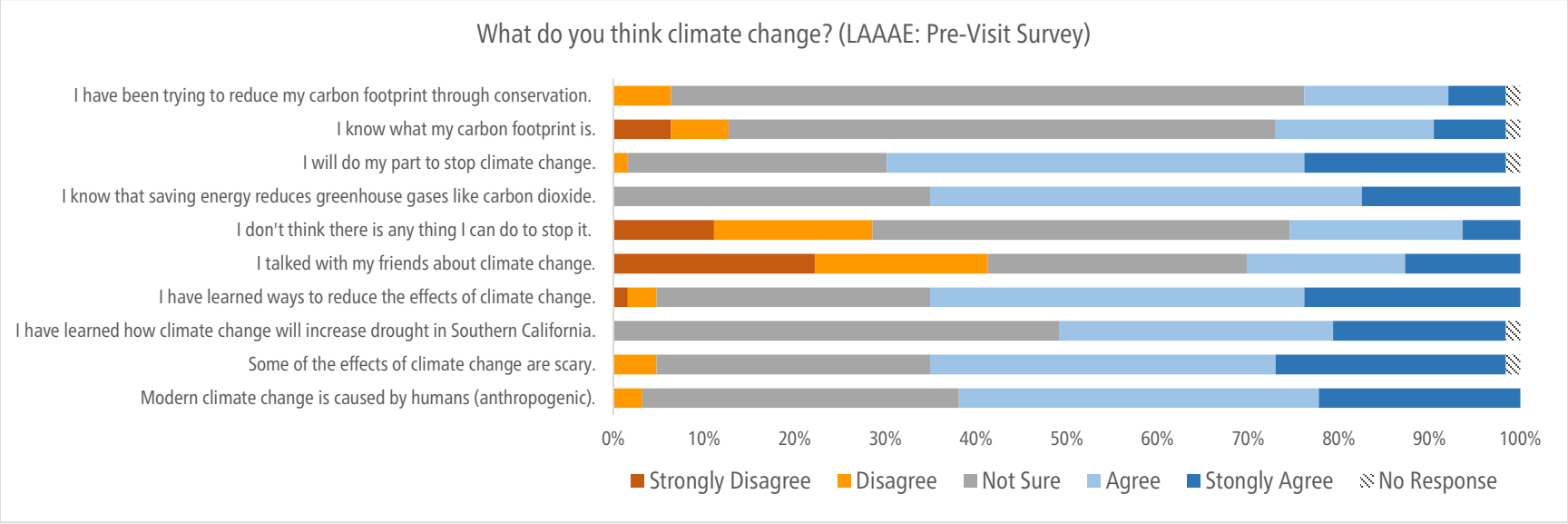


Figure 16. Pre-classroom visit survey results from the LAAAE School – Climate Change.

Table 15. Post-classroom visit survey results from the LAAAE School – Climate Change.

	After participating in the program, what do you think about climate change now?									
Responses	Modern climate change is caused by humans (anthropogenic).	Some of the effects of climate change are scary.	I have learned how climate change will increase drought in Southern California.	I have learned ways to reduce the effects of climate change.	I talked with my friends about climate change.	I don't think there is anything I can do to stop it.	I don't think there is anything I can do to stop it.	I will do my part to stop climate change.	I know what my carbon footprint is.	I have been trying to reduce my carbon footprint through conservation.
Strongly Agree	12.5% (6)	16.7% (8)	4.2% (2)	4.2% (2)	4.2% (2)	4.2% (2)	8.3% (4)	10.4% (5)	2.1% (1)	4.2% (2)
Agree	35.4% (17)	25.0% (12)	50.0% (24)	39.6% (19)	14.6% (7)	16.7% (8)	35.4% (17)	39.6% (19)	20.8% (10)	12.5% (6)
Not Sure	45.8% (22)	52.1% (25)	43.8% (21)	47.9% (23)	39.6% (19)	50.0% (24)	52.1% (25)	45.8% (22)	56.3% (27)	75.0% (36)
Disagree	4.2% (2)	6.3% (3)	2.1% (1)	6.3% (3)	18.8% (9)	16.7% (8)	4.2% (2)	4.2% (2)	16.7% (8)	6.3% (3)
Strongly Disagree	2.1% (1)	0% (0)	0% (0)	2.1% (1)	22.9% (11)	10.4% (5)	0% (0)	0% (0)	4.2% (2)	2.1% (1)
No Response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	2.1% (1)	0% (0)	0% (0)	0% (0)	0% (0)
Total Responses	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)	100% (48)

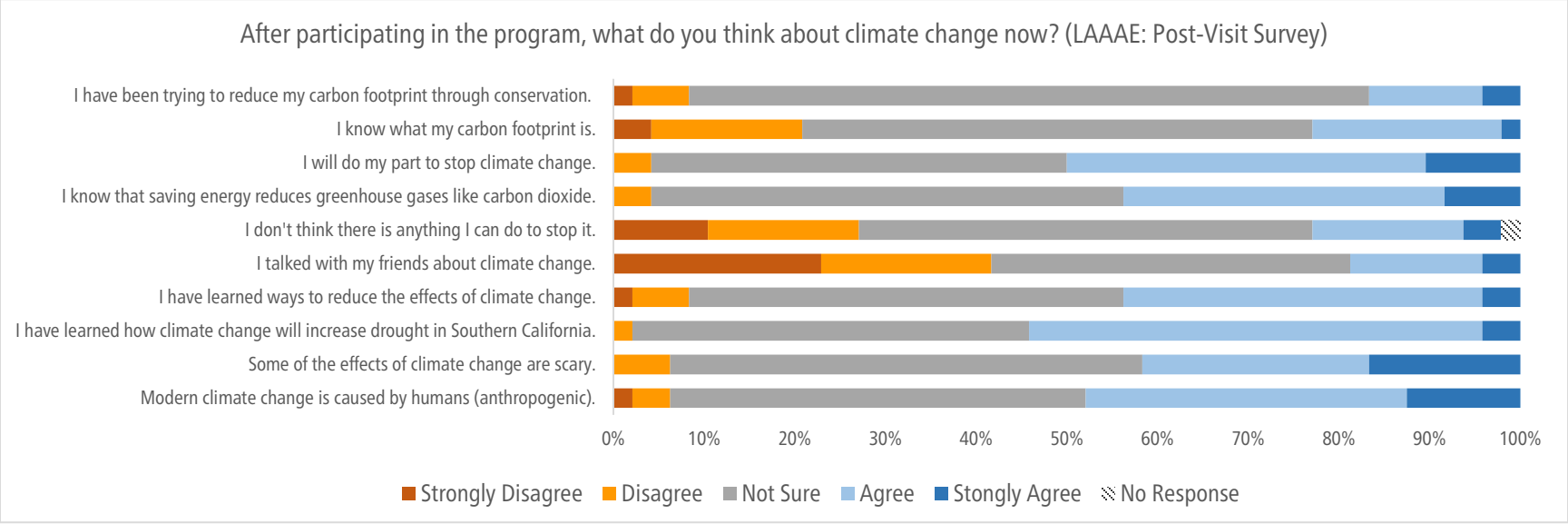


Figure 17. Post-classroom visit survey results from the LAAAE School – Climate Change.

Conclusions

Survey results showed many positive trends in views about water and energy conservation, particularly from the GALS LA School. The post-visit survey also included feedback on what students enjoyed most about the program and what they did not, which can help inform program updates and improvements. In all, the word search and crossword activity sheets were most popular among the students. Calculating individual water and energy use was not as popular, indicating that methods of teaching this subject could be improved for middle school grades. TBF used existing interactive, online water/energy calculators in an attempt to provide an easy and fun way for students to calculate their water/energy use. Future improvements could be a guided in-class exercise in calculating water and energy use exploring creative ways to simplify the process and engage students. In general the post-visit survey showed that students from both GALS LA and LAAAE thought the program was fun and that they learned something new, consistent with student attitudes of enjoyment and engagement that TBF staff observed during class visits.

Additional survey improvements would be to pair pre- and post- visit surveys to an individual student and urge teachers to make surveys mandatory so that sample sizes would not differ between pre- and post-visit surveys. These improvements would allow additional statistics to be calculated which could infer more trends and results. Another notable challenge with the survey was language barriers, many students came from English as a second language households and may not have understood survey questions well enough to respond. Having a Spanish version of the survey would be useful for future efforts. A handful of negatively-worded statements like "I don't think it's important to conserve water" or "I normally don't conserve energy" were also included in the survey as they purposely act as cognitive speed bumps that require the students to engage in a more controlled, as opposed to automatic, cognitive processing (Chen et al. 2007)[1]. These negatively-worded statements may have confused some students, especially if language barriers existed, and it would be worthy to explore how responses to these statements compare to positive-worded statements in future studies.

Project Achievements and Highlights

The overarching objective of this project is to promote energy, water, and natural gas conservation throughout LAUSD middle schools by developing, adapting, and implementing innovative educational conservation materials and activities for the classroom and/or home. We achieved the objective of creating a suite of tools that included a professionally produced 12-minute video hosted by a talented young teenager named Kenya who interviews experts and educators about water and energy conservation issues in Southern California and how LADWP is addressing those issues; an activity packet that features a collection of activities (on and off-line) that help students explore and understand the water and energy conservation; three high-quality infographics full of facts on water, energy, and

[1] Chen, Y., Redina, G., & Dedrick, F. (2007). Detecting effects of positively and negatively worded items on a self-concept scale for third and sixth grade elementary students. Online Submission, Paper presented at the Annual Meeting of the Florida Educational Research Association (52nd, Tampa, FL, Nov 14-16, 2007).

climate change; and a designated project website for educators, students ,parents ,and the public to access program materials.

Project highlights included the opportunity to directly engage students in over a dozen classrooms and ability to test and refine the developed material. Often, TBF presenters had to improvise or change course during in-classroom visits to keep students engaged or work with varying classroom schedules. Each time staff went to a new classroom and especially a new school, TBF staff applied the lessons learned from prior classroom visits and made each presentation better and more engaging.

> "The classroom lessons exceeded my expectations. The quality materials provided, the hands-on projects, and the enthusiasm of the instructors created a very engaging learning environment for the students."
>
> Principal Vanessa Garza, GALS LA

Project Challenges and Resolutions

TBF recognized challenges associated with implementing this project, noteworthy of documenting so as to improve future efforts and provide guidance for similar programs. Challenges included a coinciding timeline of developing educational materials and conducting outreach for potential schools to visit, gaining interest from teachers and principals, language barriers, ability to collect student demographic data, and general coordination with teachers to prepare for classroom visits.

As part of this grant, educational materials and outreach for potential schools to visit occurred simultaneously. Not having a completed package of educational materials available as an example for prospective teachers and principals was a limitation during initial outreach. Teachers and principals were interested to see the educational content that would be presented in classrooms. While this did not necessarily deter teachers from signing up for classroom visits, more interest may have been gained from having these materials on-hand. Additionally, many of the materials took longer than expected to develop and were not fully completed until classroom visits began.

Outreach to potential middle schools began in November 2016, and besides the challenge of not having completed educational materials to showcase, TBF staff found that initial communications by phone and email generated minimal response. Either emails or phone calls were not getting to the right school staff or messages left did not fully communicate what the program was about. Many emails were generic school emails and principals were often busy or not available. Improvements to school outreach could be made by developing appropriate higher-level district contacts that could disseminate information about the program or finding a way to engage teachers directly. All of the classrooms TBF ended up visiting were made by engaging teachers and principals directly or through existing teacher contacts. Additionally, outreach to schools was halted for most of December because of winter break schedules.

TBF's intention for classroom visits was to give the teacher as little extra work as possible in preparing for and conducting visits. TBF quickly noticed that each classroom was unique, in that teachers used different methods to keep their students focused and had different routines as part of their day-to-day activities. In the future, additional coordination with teachers to more specifically communicate proposed in-class activities and schedules would allow for a smoother visit, more consistent with the classroom rhythm.

TBF aimed to invite schools from a broad and varied demographic within LAUSD to participate in the program. Many of the classrooms TBF ended up visiting were predominately from Hispanic neighborhoods, and it became clear that not having Spanish translated educational materials nor the in-house ability to communicate in Spanish during in-classroom visits was a limiting factor. The effectiveness of the program could be increased by having Spanish versions of all materials. Translating the program into Spanish and other relevant languages will be considered as new funding becomes available. Additionally, it was difficult to collect relevant demographic data for the quantitative analysis of water and energy savings because students, or parents, were hesitant to provide the information. According to one of the teachers, many of the students are from undocumented households and reluctant to provide personal information event with the assurance of anonymity.

Impact Form Summary

Project impact was measured using the LADWP Project Impact Form (Appendix R). Water and energy savings were captured from conservation devices distributed, and activity changes were measured by classroom engagement, social surveys, and student completion of activity packets. The focus of this grant was education and outreach to LAUSD middle schools; therefore, all direct outreach was conducted during classroom visits, engaging all students and teachers participating. TBF also opportunistically presented material developed as part of this grant during the Nickelodeon Studios First-Annual Earth Day Event. TBF's diverse outreach strategy also included press releases, media, newsletters, and websites related to project activities. These outreach venues did not involve face-to-face dialogue and, as expected, yielded a lower engagement rate. Nonetheless, indirect outreach was an important component of this project and provided a method to expand the reach of the program past the schools TBF visited and promote teachers to integrate the materials developed into their classrooms.

Future Directions / Ongoing Work

Educating the future about the water and energy challenges facing Southern California and the magnifying effects of climate change is more important than ever. TBF will work to integrate this program into its other educational outreach and restoration events, and also seek new funding to refine the materials and continue presenting in LAUSD classrooms. The predicated effects of climate change, sea-level rise and persistent drought could have a profound effects on the LA region which makes preparing this generation so crucial.

List of Appendices

Authorized Representative Signature: _____

Representative Name and Information:

Rodney Abbott
Watershed Programs Coordinator
The Bay Foundation
rabbott@santamonicabay.org
Office: (310) 873-3956
www.santamonicabay.org

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Water and Energy Conservation for LA Middle School Students

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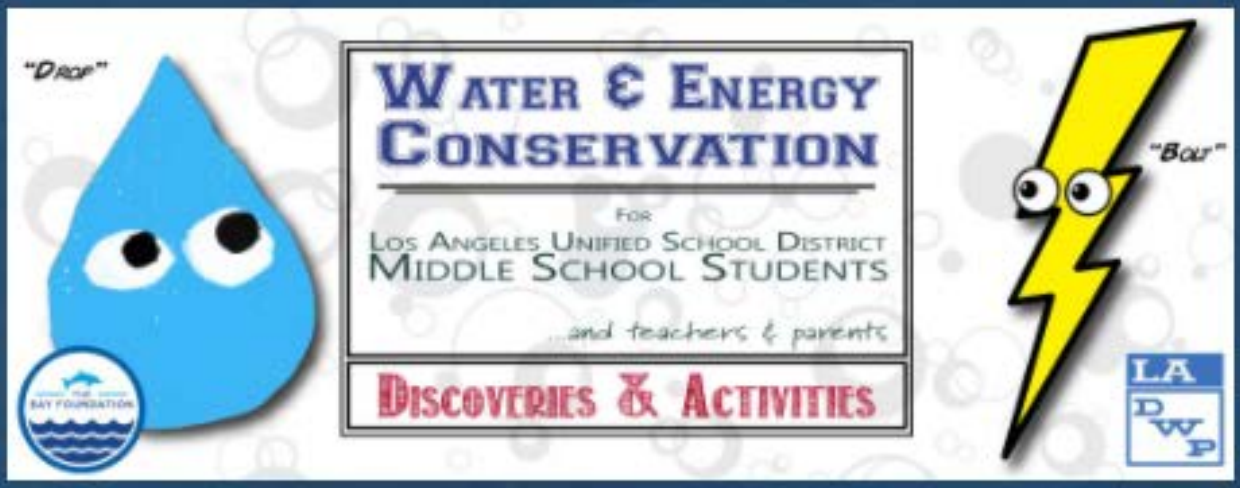


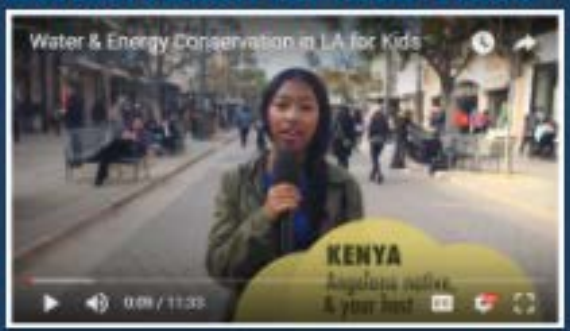
Welcome!!

Through a generous grant from the Los Angeles Department of Water & Power (LADWP), The Bay Foundation (TBF) created this engaging and fun water and energy conservation project for Los Angeles Unified School District (LAUSD) middle school students and teachers. It is meant to enhance and not replace current lesson plans regarding water and energy conservation and climate change. The *Project Activity Book*, educational video, and infographics were created just for this project and were presented to hundreds of Los Angeles Unified School District (LAUSD) middle school students from Panorama City to South Los Angeles. The materials can be used freely by teachers, students, and parents, either as part of classroom instruction or by students independently to supplement their studies.

1. Project Activity Book

Activity packet created by TBF staff. Click image for PDF of entire package.

2. Water & Energy Conservation for Kids Video



Click image above to see video (opens to YouTube)

Water & Energy Conservation Survey

We want to know what you think!

Please give your honest opinion to the following questions. There are no right or wrong answers, and your responses are anonymous. Thank you!

1. What do you think about water conservation?

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Using more water than you need is wasteful.	○	○	○	○	○
I don't like taking shorter showers.	○	○	○	○	○
I learned in school about water conservation.	○	○	○	○	○
I can estimate how many gallons of water I use a day.	○	○	○	○	○
I am too young to conserve water.	○	○	○	○	○
I can conserve water if I want to.	○	○	○	○	○
I don't think it's important to conserve water.	○	○	○	○	○
I already conserve water.	○	○	○	○	○

2. What do you think about energy conservation?

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Turning off unused lights is important.	○	○	○	○	○
Saving energy, saves money and the Earth.	○	○	○	○	○
In school I learned about the importance of energy conservation and climate change.	○	○	○	○	○
I see people around me conserve electricity.	○	○	○	○	○
It's easy to turn off unused electronics.	○	○	○	○	○
I get upset when I'm told to turn something off.	○	○	○	○	○
I will try to remember to turn off the light when I leave a room.	○	○	○	○	○
I normally don't conserve energy.	○	○	○	○	○

3. What do you think about Climate Change?

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
Modern climate change is caused by humans (anthropogenic).	○	○	○	○	○
Some of the effects of climate change are scary.	○	○	○	○	○
I have learned how climate change will increase drought in Southern California.	○	○	○	○	○
I have learned ways to reduce the effects of climate change.	○	○	○	○	○
I talked with my friends about climate change.	○	○	○	○	○
I don't think there is any thing I can do to stop it.	○	○	○	○	○
I know that saving energy reduces greenhouse gases like carbon dioxide.	○	○	○	○	○
I will do my part to stop climate change.	○	○	○	○	○
I know what my carbon footprint is.	○	○	○	○	○
I have been trying to reduce my carbon footprint through conservation.	○	○	○	○	○

4. What is the name of your school?

5. What is your gender?

- ○ Female
- ○ Male

6. What grade are you in?

- [ ] 6th
- [ ] 7th
- [ ] 8th

7. In what ZIP code do you live? (enter 5-digit ZIP code; for example, 90004 or 94305)

Appendix C

"Water and Energy Conservation for LA Kids" – Water and Energy Conservation doesn't have to be boring! This 11-minute video takes a serious matter and makes its engaging and entertaining.

https://youtu.be/ctRTo131Ukg

SAVE WATER SAVE L.A.

How much Water is on Earth?

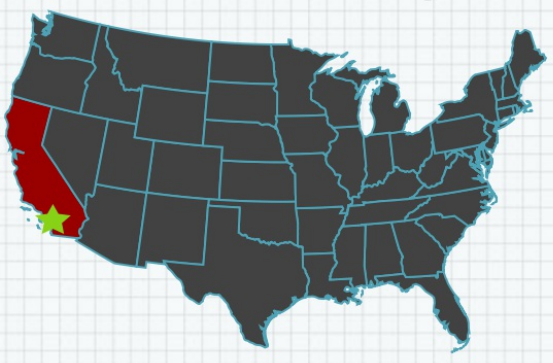
A lot! Earth's oceans cover the majority of the planet and make up 97.5% of water...

Only 2.5% of this is freshwater and 70% of that is frozen in polar icecaps!

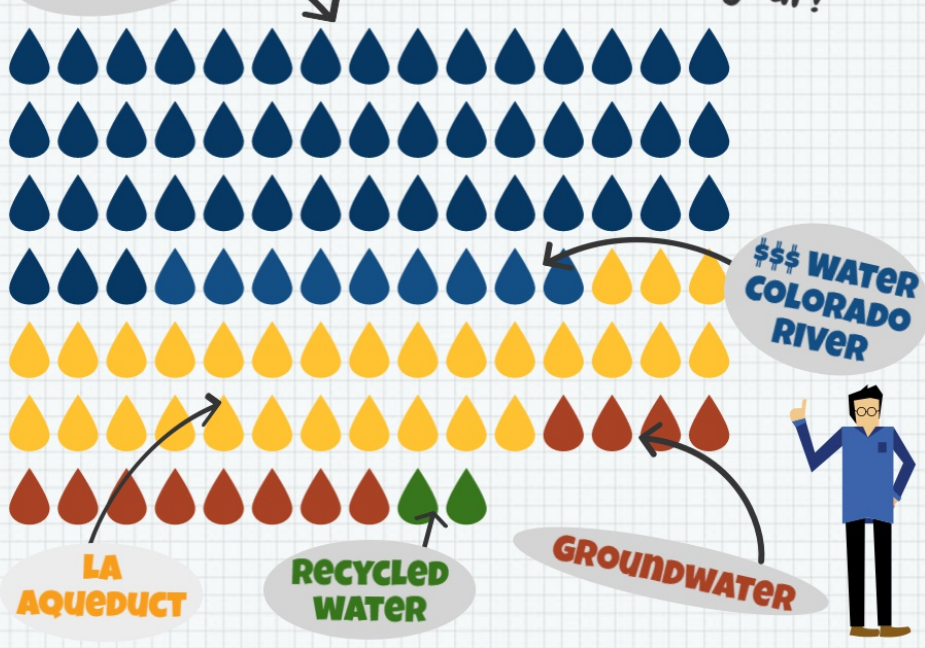
That leaves less than 1% available for humans!

L.A. Water Facts

LADWP's Water System is the nation's 2nd largest municipal water utility



The Water System supplies approximately 167 billion gallons of water every year!



Serving a population of 4 million people within 473 square miles!

Save Water...

TURN IT OFF

Turning off the tap while brushing your teeth, can save more than 200 gallons per month.

REDUCE SHOWER TIME

Install low-flow showerheads. You could save an average of 2900 gallons per year.

REPAIR LEAKS

Check and fix leaks in toilet tanks and faucets. Install low-flush toilets.

FULL LOADS

Wash full loads of laundry and use the appropriate water level or load size selection.

LOSE THE LAWN AND PLANT NATIVE PLANTS

Planting native plants reduces the need for costly irrigation and also provides attractive wildlife habitats.

INSTALL A RAIN GARDEN

Rain gardens prevent flooding, increase home value and reduce pollution from runoff

Did you know?

5800 gallons of water = Up to $280 in savings per year on your family's water bill. = The price of an Xbox One S

TO LEARN MORE VISIT...

www.santamonicabay.org
&
www.myladwp.com

SAVE ENERGY SAVE L.A.

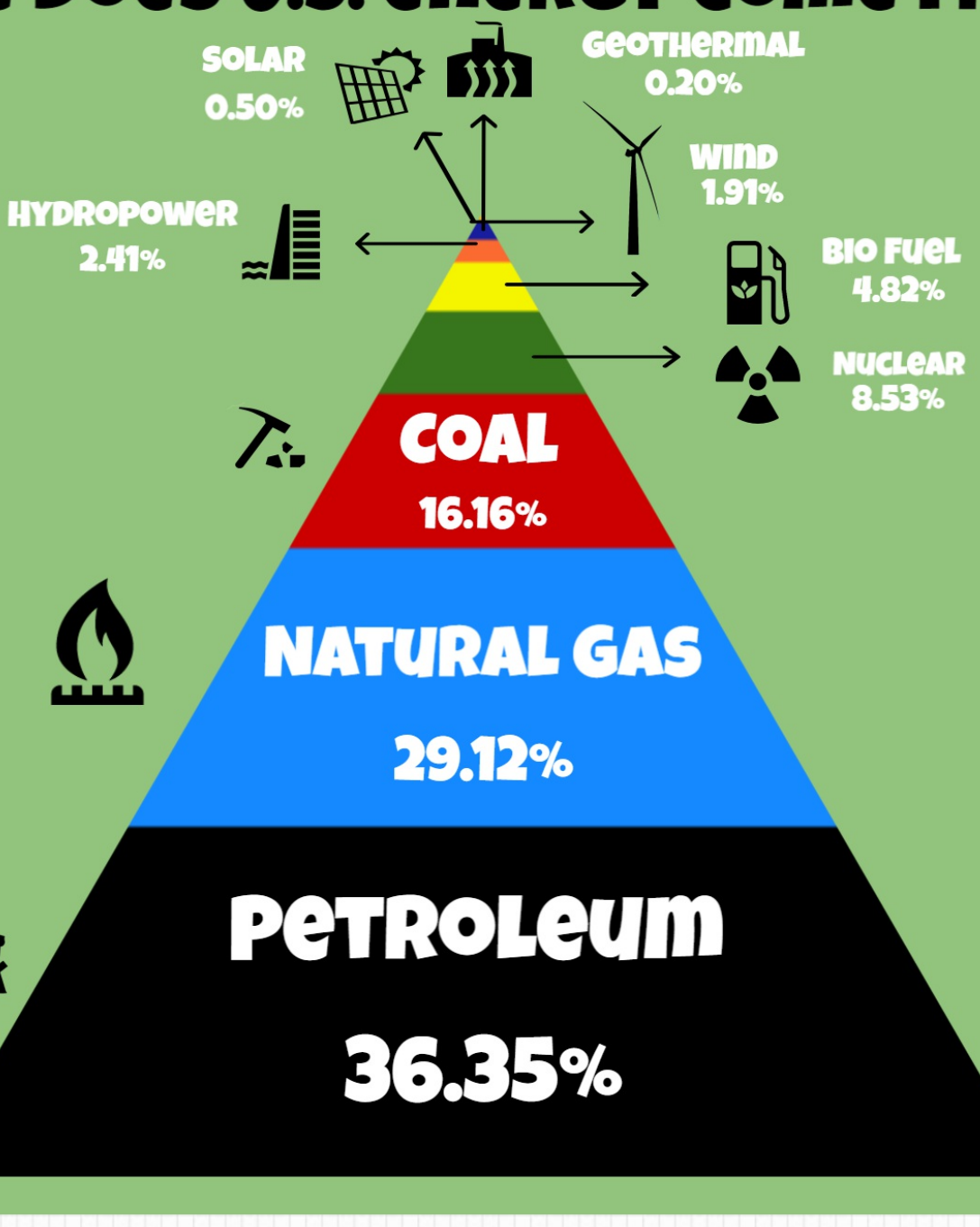
WORLD'S ENERGY IMBALANCE

Did You Know?

The average American uses 5x more energy than the average global citizen

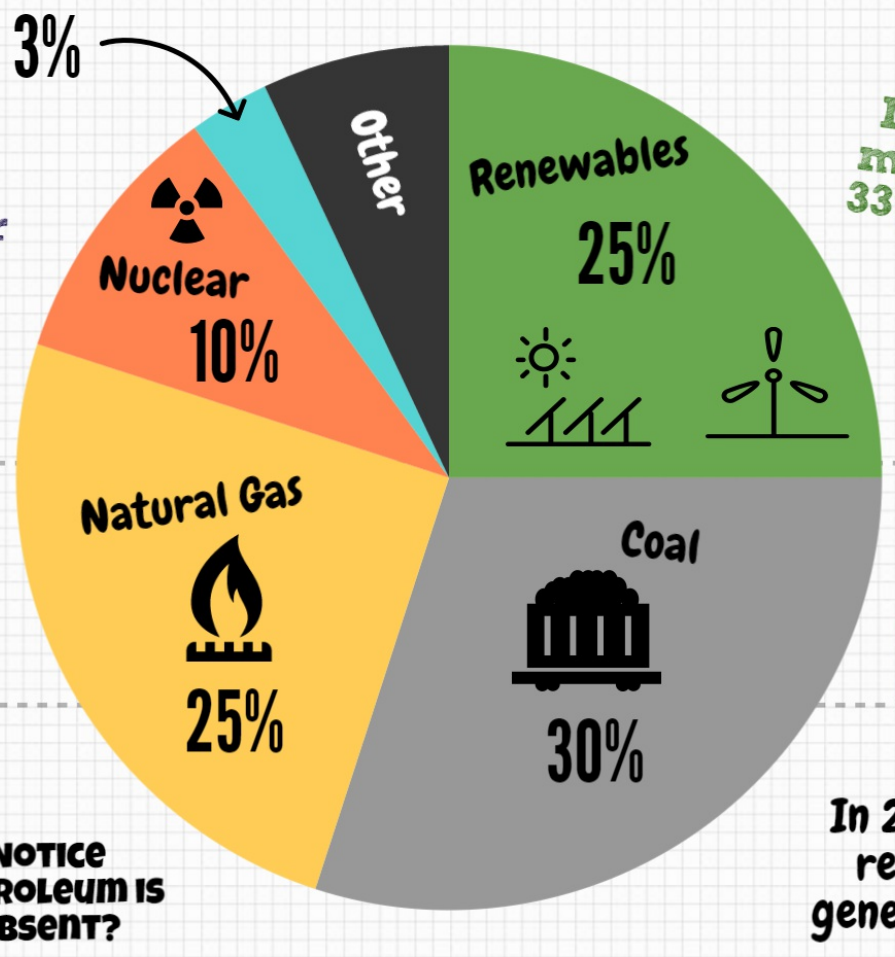
Americans make-up 5% of the world's population but consume 24% of the world's energy

WHERE DOES U.S. ENERGY COME FROM?



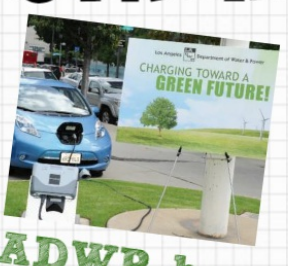
WHERE DOES L.A.'S ENERGY COME FROM?

L.A.'S CLEAN ENERGY FUTURE



rebuilding local power plants to eliminate ocean cooling

NOTICE PETROLEUM IS ABSENT?



LADWP has a mandate to use 33% renewables by 2020

Renewable energy includes wind, solar, biomass & waste, geothermal, and small hydroelectric

Clean energy future means less coal use

In 2016, LADWP reduced coal generated power by 25%

WHY SAVE ENERGY?

CONSERVE ENERGY RESOURCES

Most of our energy comes from NONRENEWABLE fossil fuels like petroleum, coal and natural gas.

REDUCE CARBON DIOXIDE EMISSIONS

Electricity production generates the largest share of greenhouse gas carbon dioxide emissions.

REDUCE AIR & WATER POLLUTION

Energy is produced by the combustion of fossil fuels which release pollutant gases into the air and water.

SAVE $$$

Saving energy can result in significant savings on your monthly energy bill.

SAVING ENERGY IS GOOD FOR THE PLANET!

SAVING ENERGY AT HOME

CHANGE OUT LIGHT BULBS

Replace incandescent light bulbs with compact fluorescent lights (CFLs). CFLs utilize 1/3 the energy of regular incandescent bulbs.

TURN IT OFF

Turn off lights and equipment when they are not in use.

UNPLUG

Be aware of "Energy Vampires." These are appliances that use energy even when you think they are not. Unplug these appliances when not in use or use a surge protector that can be switched off.

INVEST

Buy energy-saving "Energy Star" labeled appliances and products.

ADJUST THERMOSTAT

Install a programmable thermostat to adjust the temperature automatically and maximize your energy savings.

OFF-PEAK TIMES

Use appliances at off-peak times (after 6 pm) to save energy and money.

TO LEARN MORE VISIT....

www.santamonicabay.org
&
www.myladwp.com

Climate Change and Global Warming

The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen.

IPCC 2014

Climate Change is Happening

Our earth is warming

More CO2 and greenhouse gases

Earth's average temperature has risen by 1.5°F over the past century

...and is projected to rise another 0.5 to 8.6°F over the next 100 years.

Weather patterns are changing

Oceans are warming and becoming more acidic

Ice caps are melting and sea levels are rising

Climate Change Affects Everyone

Our lives are connected to the climate

agriculture

energy

water supply

forests

recreation

plants, animals, and ecosystem

coastal area

health

What can we do about it?

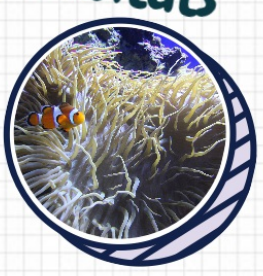
Use less energy

More renewable energy sources

Prepare for droughts by using less water

Plant crops that can survive a changing climate

Protect and preserve disappearing habitats



Improve air pollution

lower your emissions

plant trees

THE BAY FOUNDATION

TO LEARN MORE VISIT...

www.santamonicabay.org

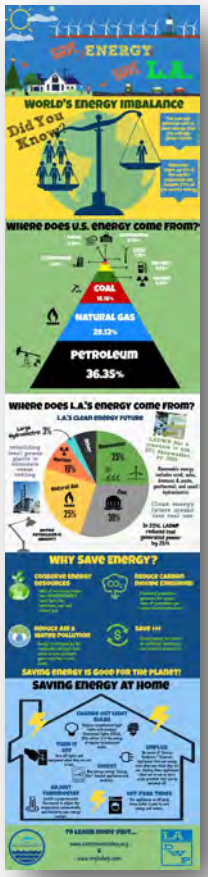
&

www.myladwp.com

LA DWP

Working for a Sustainable L.A

Appendix G



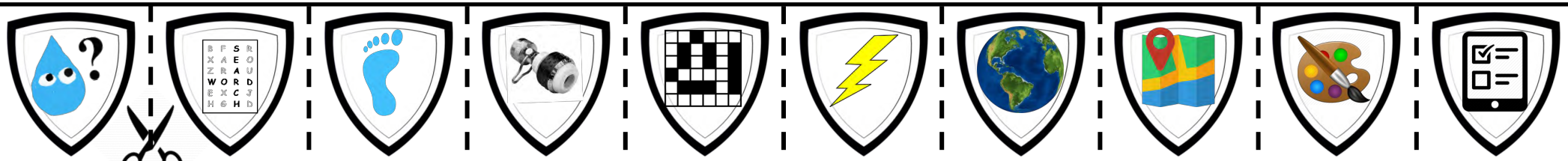
THE BAY FOUNDATION

LA DWP

WATER & ENERGY CONSERVATION

DISCOVERIES & ACTIVITIES

After you complete an activity, write your first name and last initial in the correct Badge box below

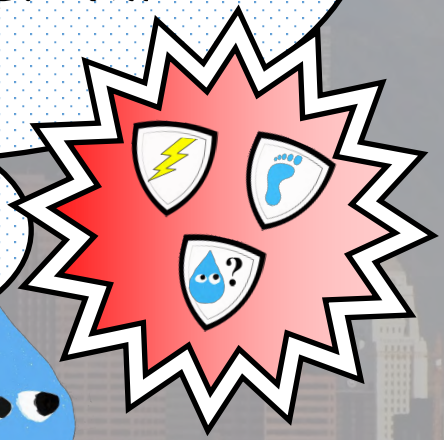


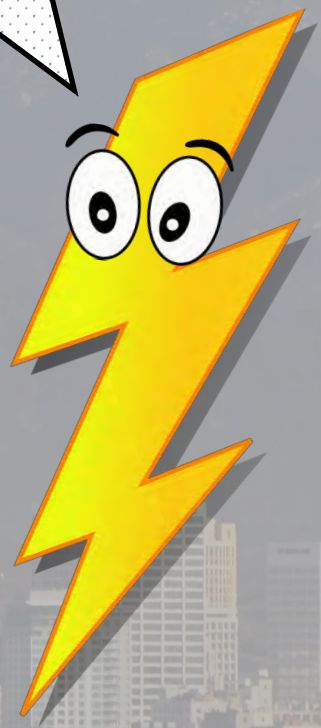
Hi! My name's Drop from the 'Save the Drop' campaign. My friend and I Bolt hope you enjoy the following Activities!!

Activities include a crossword puzzle and word-search, interactive online exercises and story maps, ways to save water & energy at home, and much more!!

Complete an activity and earn that badge. The more badges you earn, the greater your chances of winning a prize!!

Like these!!





If you have any questions, ask your teacher, family, or email rabbott@santamonicabay.org at The Bay Foundation.

All materials, videos, and helpful links can found at TBF-LADWP Water & Energy Conservation Resources.

THE BAY FOUNDATION

SAVE the DROP
SAVETHEDROPLA.ORG

LA DWP Los Angeles Department of Water & Power

Name _____ Date _____ Teacher _____

WATER KNOWLEDGE

Complete the following worksheet and turn into your teacher to earn the water knowledge badge on your gamecard.

ANSWER THE FOLLOWING QUESTIONS

1. Where does the water that flows from your faucet a home come from?
    a. A home well
    b. From a lake, river or community well, to a water treatment facility and to your house
    c. Directly from a river or lake to your house
    d. Other
    e. I don't know

2. Does the water that flows out of your faucet at home have a cost?
    a. Yes
    b. No
    c. I don't know

Complete to Earn Your

3. Where does water go after it is flushed down the toilet or swirls down the drain in your home?
    a. To the city wastewater treatment plant
    b. Directly to the ocean
    c. Through the home septic system
    d. I don't know

4. What percentage of the average human body weight is made up of water?
    a. 50 percent
    b. 10 percent
    c. 70 percent
    d. 5 percent

5. There is more water available in some parts of the country and/or state than in others because of differences in:
    a. Weather
    b. Climate
    c. Local water consumption
    d. Geography
    e. Infrastructure (water treatment plant; pipes; water storage tower)
    d. All of the above
    e. None of the above

6. In two or three sentences, explain whether you believe it is possible for individuals to change their habits and use less water. Do you think that individuals choosing to use less water can have a positive impact on the water supplies of their community?

_____

_____

_____

_____

THE BAY FOUNDATION

LA DWP Los Angeles Department of Water & Power

TURN the page to learn more about water ->

WATER KNOWLEDGE

Can you find all the water words?

```
                S
              E T H
            R F X X O
          I J T M O V W
        V G W Q F W D F E
      E N F O E E W D T R R
    R K D I T T Y V J C K A T
    R I R E L X C L O U D S I
  T E J I A V A F F G D X I K N
  E S X N R I R H R I E V D F M
  C E D K E W F E E A U Y R S H
  U R P I T X W X S I Q W O O R
  A V E N A V Q L H N A C U E I
  F O V G W X V E W W O C G D L
  E I A D D N S A A R S C H M S
    R S X N E G K T S Q G T N
    W E O U D R S E G W F O O
      R V O R D L R L L W M
        D R A I N S X V I
          G G W A S T E
```

Complete to Earn Your

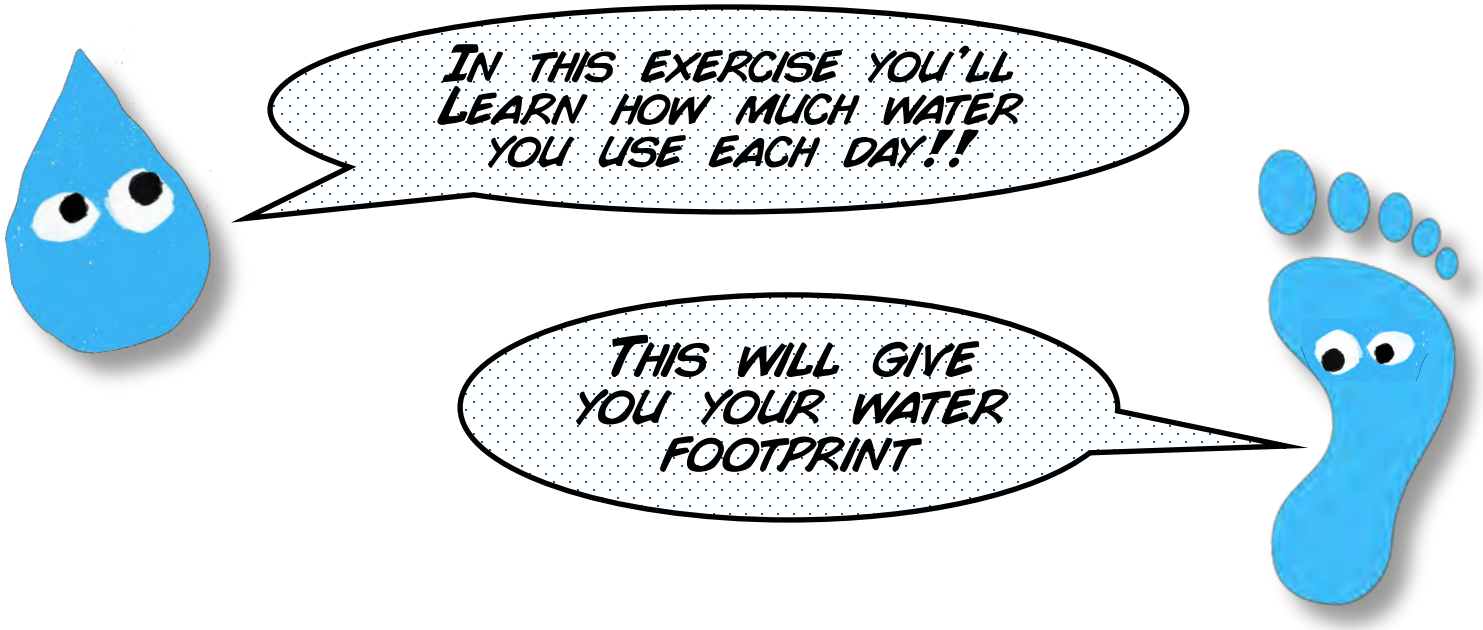
WATER Search BADGE

AQUEDUCT
DRAINS
FAUCET
GROUNDWATER
RESERVOIR
SHOWER
WETLAND

CLOUDS
DRINKING
FRESHWATER
LEAKS
RIVER
SNOW

CONSERVE
DROUGHT
GARDEN
RAIN
SAVE
WASTE

Your Water Footprint



For most of us, getting water is as easy as turning on the faucet. But do you know how much water you or your family actually use every day and how you compare to the US average?

We would like you to take this survey twice — once this week to establish how much water you and your family actually use, and again in 7 days. During that 7 seven days, do your best to reduce you water footprint by taking shorter showers or turning off the water when you brush teeth, or if you already do this — there are lots of tips at the end of the survey.

Complete to Earn Your

WATER FOOTPRINT BADGE

Go to www.watercalculator.org and click START >

After you've completed the first survey, turn this page over and record your results.

THE RESULTS OF THE WATER FOOTPRINT SURVEY WILL LOOK LIKE THIS EXAMPLE...

EXAMPLE

Your water footprint:

2,060 Gallons/Day

Household: **4,197** Gallons/Day

That's about average for people in the US. Find out how to lower your results below.

The US Average is **2,220** Gallons/Day

Complete to Earn Your

WATER FOOTPRINT BADGE

ENTER YOUR RESULTS IN THE SPACES BELOW

#1

Your water footprint:

_____ Gallons/Day

Household: _____ Gallons/Day

That's about average for people in the US. Find out how to lower your results below.

The US Average is _____ Gallons/Day

Date_____

It's been 7 days! How do you think you did conserving water???

Complete to Earn Your WATER FOOTPRINT BADGE

Take it again at www.watercalculator.org and record your answers below

Box#2

Your water footprint:

_____ Gallons/Day

Enter answer in box 2a on page 4

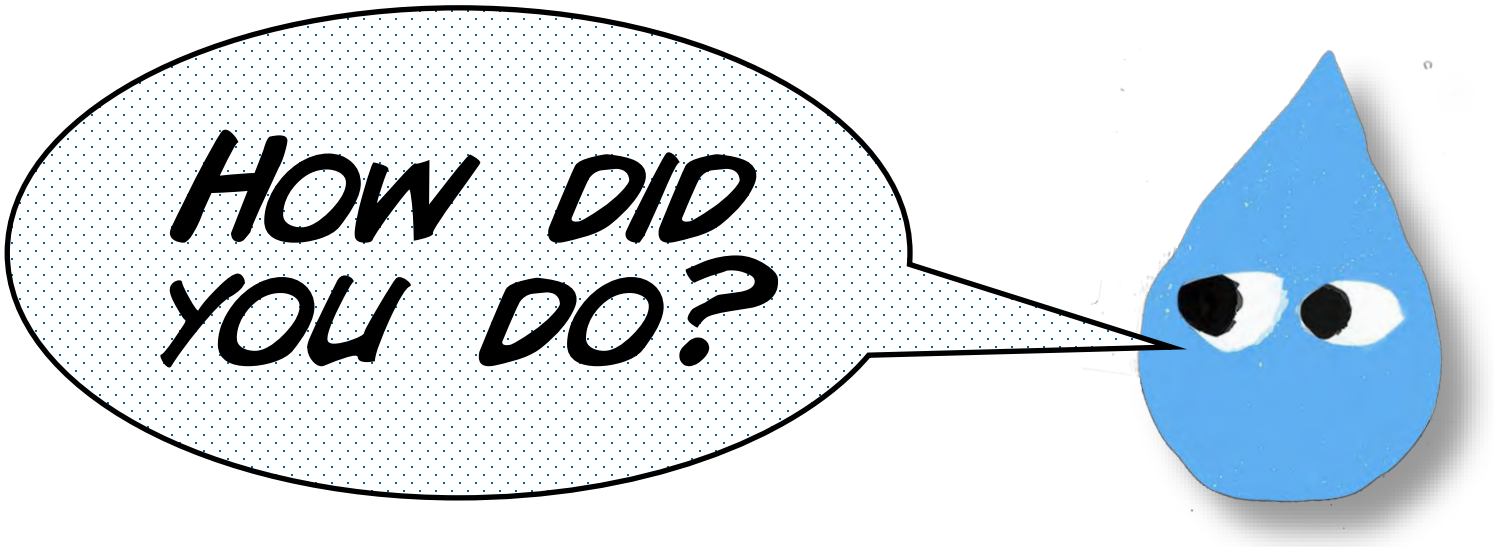
Household: _____ Gallons/Day

Enter answer in box 2b on page 4

That's about average for people in the US. Find out how to lower your results below.

The US Average is _____ Gallons/Day

Date _____



2C - 2D Γ F

Your Household Saved!

Total Water Saved!

You Saved!

To see how you much water you saved, write answers from Boxes #1 & #2 above into the table below. Calculate how much water was used and saved.

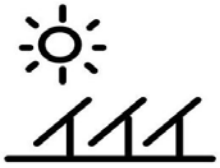
	Water Footprint ***Box #1*** (*gallons per day*)	**Water Footprint** ***Box #2*** (*gallons per day*)	***How much water was saved??***
My Footprint	1A	1B	**1A-1B = ? gal/day you saved!**
Household Footprint	2A	2B	**2A-2B = ? gal/day household saved!**
Total (*add columns*)	M!ЬHA = X	MBЬHB = Y	**X-Y = ? gal/day total saved!**

Complete to Earn Your

WATER FOOTPRINT BADGE

Page 4 of 4

Energy Knowledge



Complete to Earn Your

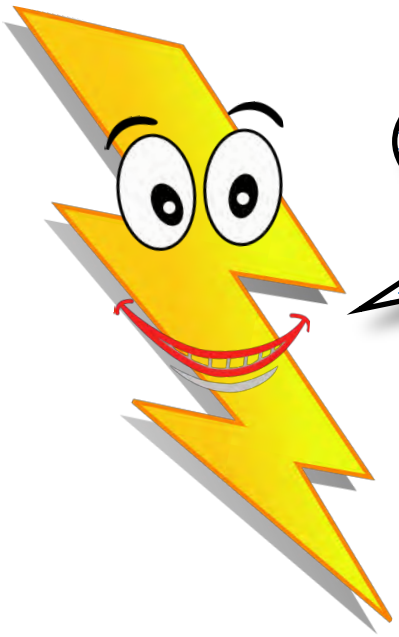
ENERGY KNOWLEDGE BADGE

Across

1. An energy storage device made up of one or more electrolyte cell
3. Fuels produced directly or indirectly from organic material
5. Agency that manages the water and power in Los Angeles
7. Turning _____ the lights when you leave the room saves energy
10. Fossil fuels, such as coal, petroleum, and natural gas are examples of these energy sources
11. A derived unit of power in the International System of Units (SI)
12. Turning off the lights, TV, and computer when we aren't using them is a way to _____, or save energy
13. The largest source of energy consumed in the U.S.

Down

2. A device that adjusts the amount of heating and cooling produced in your home
4. _____ energy comes from the sun
6. To supply with electricity
8. _____ farms have turbines that convert kinetic energy into mechanical power
9. Energy produced by extracting the earth's internal heat



How long can you go without using electronics??

To earn your **Energy Nap Badge**, pick a day to go at least **3 hours** without using an electronic device such as a computer, smart phone, or **TV**.

There is a bonus prize for the student who goes the longest and lets their electronic friends take a nap!!

Please have you parent or guardian sign below to verify you completed the challenge.

We need a nap once in a while...

Complete to Earn Your

ENERGY NAP BADGE

_____

Date completed?

_____

How many hours?

_____

Parent/Guardian's Signature

Your Ecological Footprint

Take "Your Ecological Footprint" @
http://www.footprintnetwork.org/resources/footprint-calculator/

Click here to go full-screen

Complete to Earn Your

ENERGY FOOTPRINT BADGE

How many Planet Earths does your lifestyle require_____

What was one way you reduced your Ecological Footprint?

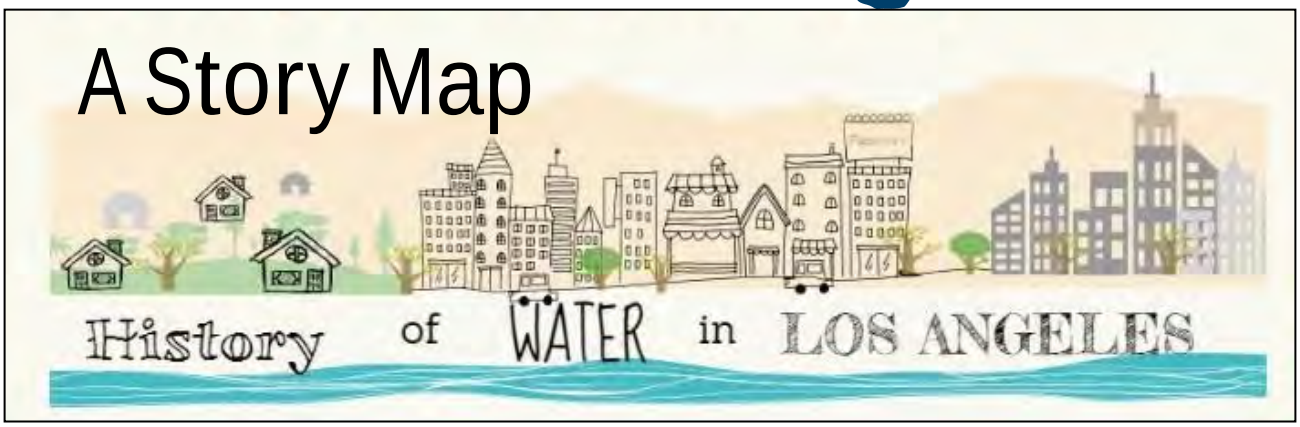
_____

_____

What was your largest ecological footprint category shown at the end?

_____

The Story of Water in Los Angeles



http://bit.ly/LAWaterStoryMap

Complete to Earn Your

WATER STORYMAP BADGE

From what valley did Los Angeles first import it's water?

What was the average household water use in HCF ("hundred cubic feet") for your zipcode?

What was the average number of gallons used in your zipcode (1 HCF = 748 gallons)?

Did your zipcode decrease water use from 2006 to 2012?

THE BAY FOUNDATION

LA DWP

Simple ways to conserve water

Make you sure completed "Your Water Footprint" exercise. Did you discover if your home has low-flow water conservation devices installed?

BATHROOM* AERATOR

0.5 gallons
per minute

YES ☐ NO ☐

LOW-FLOW SHOWERHEAD

2.0 gallons
per minute

YES ☐ NO ☐

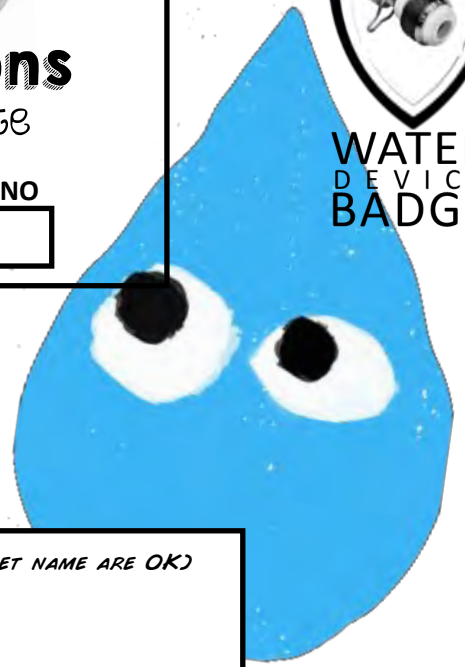
KITCHEN AERATOR

1.5 gallons
per minute

YES ☐ NO ☐

Complete to Earn Your

WATER DEVICE BADGE



Most bathroom and kitchen faucets use about 2.5 gallons of water per minute. By installing one or more of the FREE devices shown above, you can easily save thousands of gallons of water per year.

Work with your family to see which device you could use to install to save water! Check YES or NO under each.

To qualify for this badge, assess your home's faucet types, select a device you could use (none can be selected), enter your zip code and Street Address (not to be shared), and get this formed signed.

Zip Code

Street Address (block number & street name are ok)

Have a Parent or Guardian Sign to confirm you completed this exercise

*Do you know what aerator means?? **Turn over to find out...***

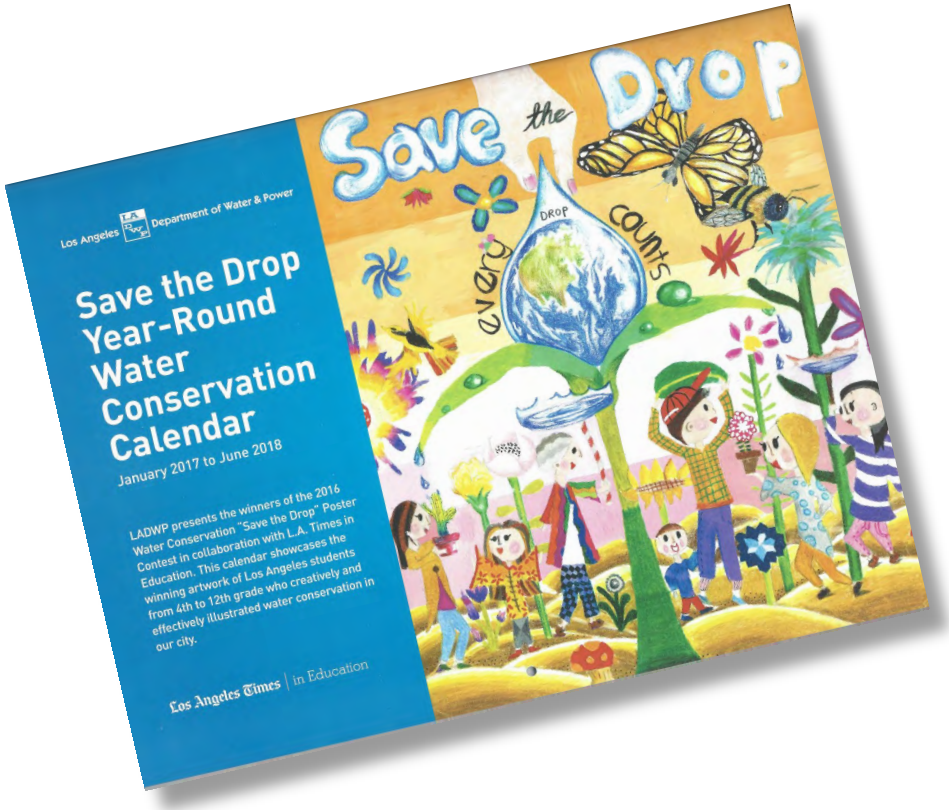
Aerator is the noun form of the verb **to aerate** — *to put air into something.* Some words that share the same root are aerosol, aerodynamic, and aerobic.

How do you think an aerator helps save water?

Question:

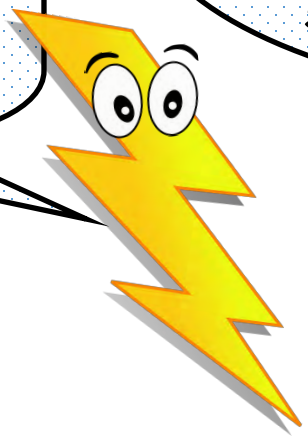
If taking a 10 minute shower with a 2.5 gallons per minute showerhead uses 25 gallons of water, how many gallons of water does a 10 minute shower use using a 2.0 gallons per minute?

How many gallons are saved over one year?



BE CREATIVE TO EARN YOUR CONSERVATION ART BADGE!! SHOW HOW YOU THINK LOS ANGELES CAN CONSERVE MORE WATER OR ENERGY THROUGH DRAWING, PAINTING, OR STORY. ENTRIES WILL BE SHARED WITH LADWP AND SOME POSTED TO OUR WEBSITE!!

FOR IDEAS AND INSPIRATION, CHECK OUT THE LADWP CALENDAR THAT WAS GIVEN TO YOUR TEACHER. THE ART WAS MADE BY OTHER LAUSD STUDENTS!!



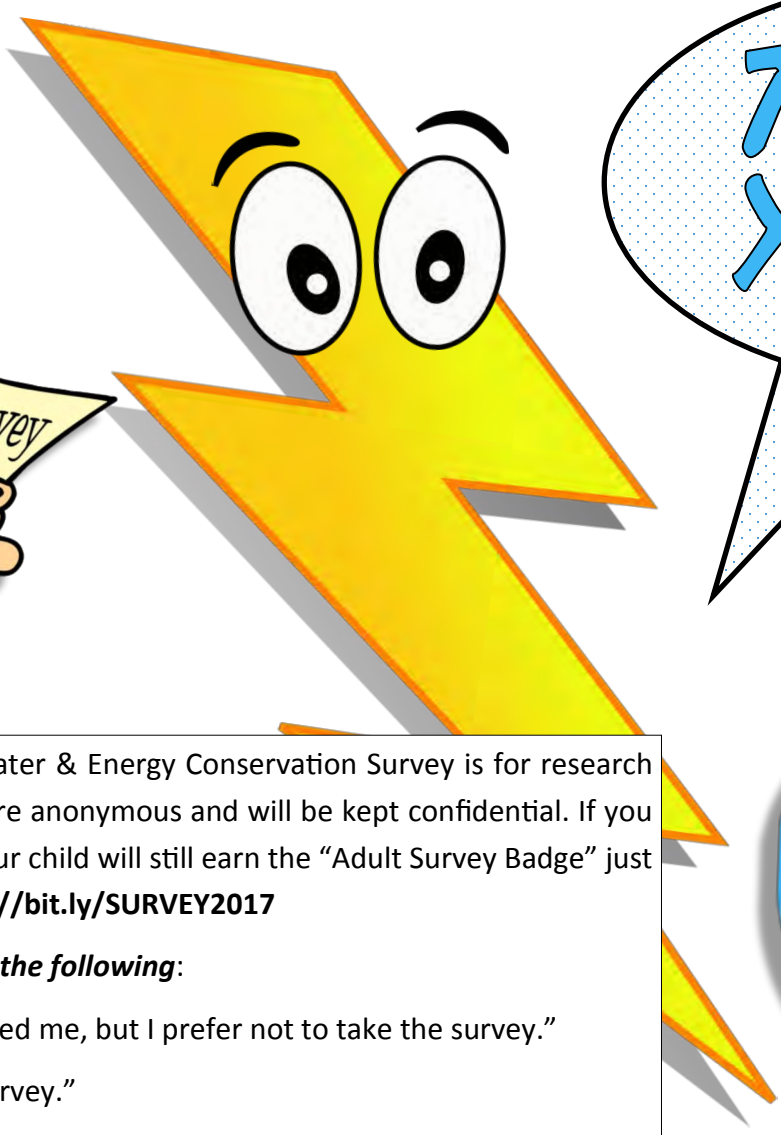
Complete to Earn Your

CONSERVATION ART BADGE

THE BAY FOUNDATION

LA DWP

Ask your parent or Guardian to take a short conservation survey to help us better understand the attitudes and habits of water & energy users.



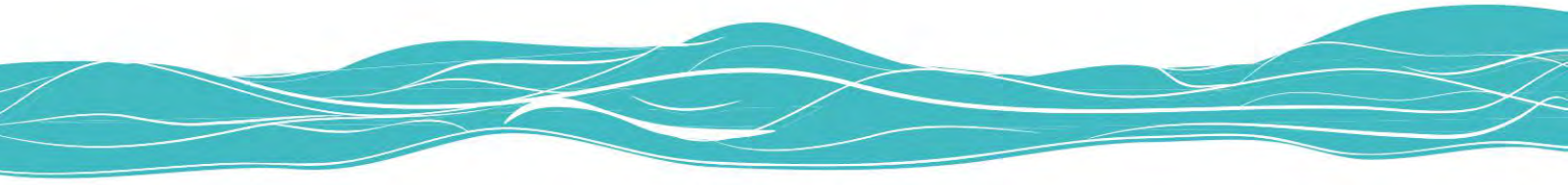
Have Adult Complete to Earn Your

ADULT SURVEY BADGE

For Parent or Guardian: The Water & Energy Conservation Survey is for research purposes only. Your responses are anonymous and will be kept confidential. If you prefer not to take the survey, your child will still earn the "Adult Survey Badge" just for asking you. Survey Link: **http://bit.ly/SURVEY2017**

Please select only one of the following:

- ☐ "My child asked me, but I prefer not to take the survey."
- ☐ "I took the survey."



Visit

www.santamonicabay.org
&
www.myladwp.com
for more info

THE BAY FOUNDATION

LA DWP

Appendix H

#1: Solar Rover (4M)

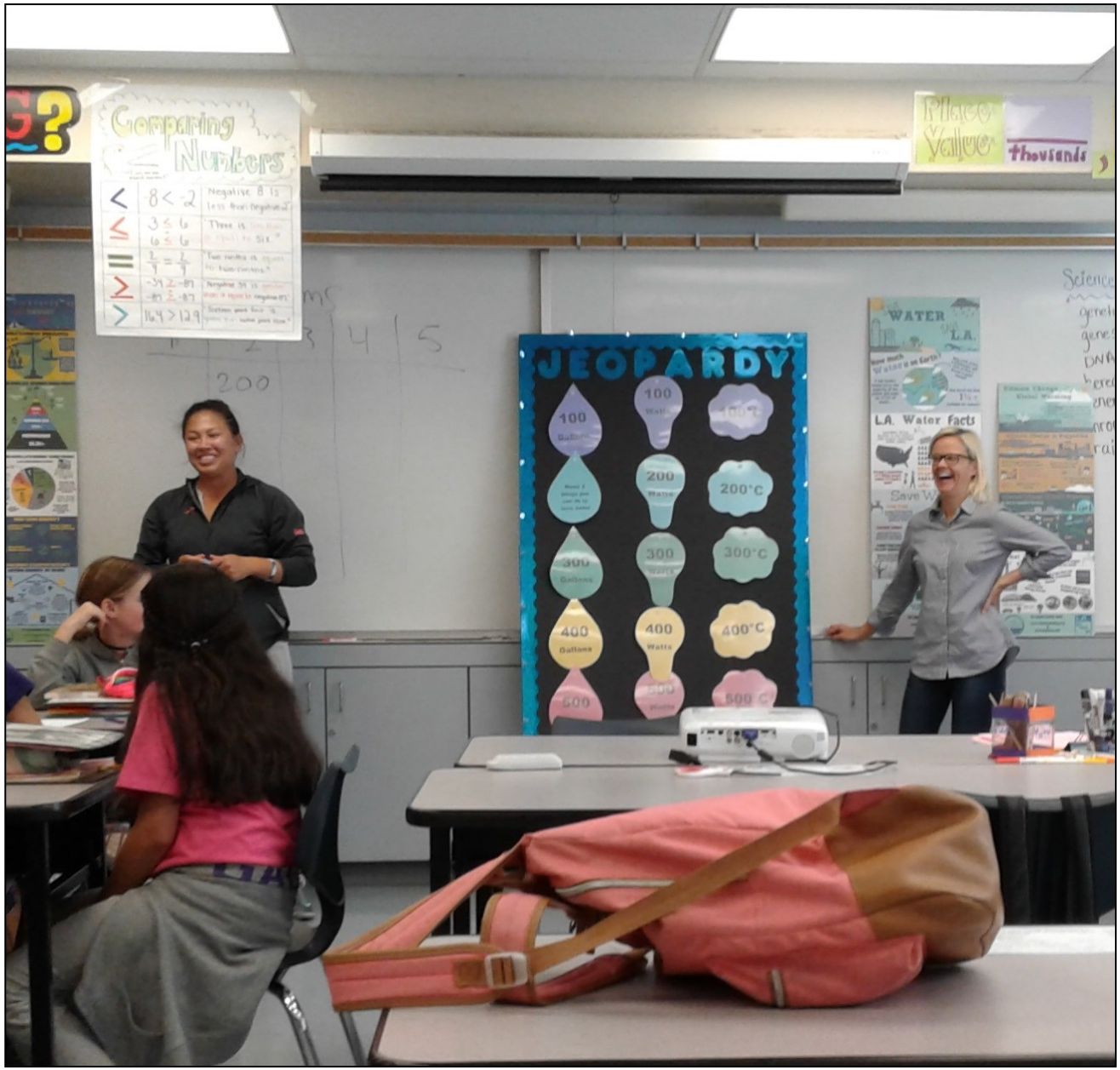
#2: Grow n Growth Terrarium (Creativity for Kids)

#3: Salt-Powered Robot (4M)

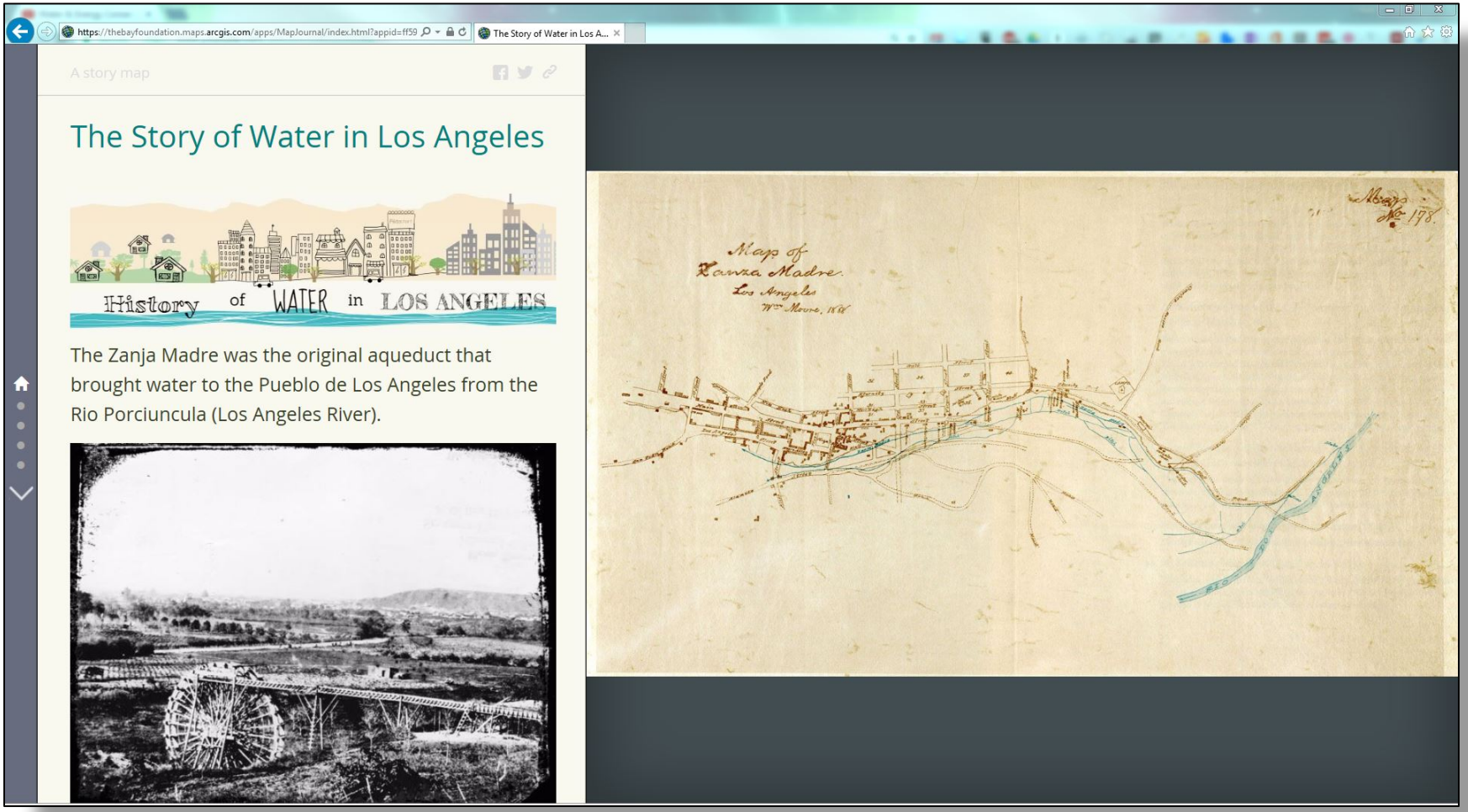
#4: Silicon bracelets: ("Save Water, Save L.A." and "Save Energy, Save L.A.")

#5: "Seed Bomb" filled with native seeds students could plant at school or home (design and made by TBF staff)

Appendix I

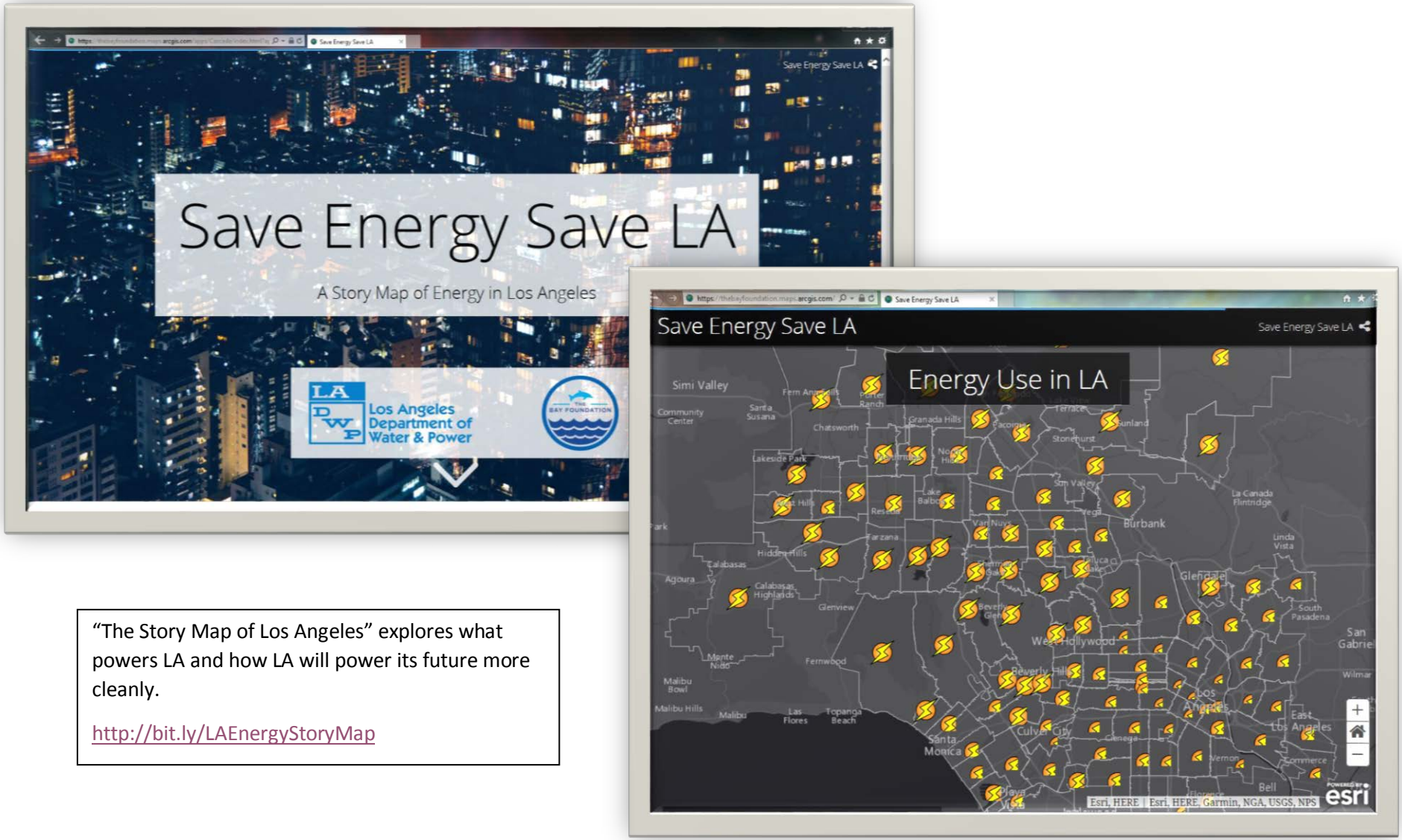


TBF staff interact with Girls Athletic Leadership School, Los Angeles (GALS LA) sixth graders during a Jeopardy-themed game based on questions about water, energy, and climate change (Photo: TBF).



"The Story of Water in Los Angeles: A Story Map" is an interactive exploration of LA's water history and its complex water system. Through historic photos and LADWP data, students will learn about the development of the aqueducts, regional and statewide precipitation amounts, drought and conservation, and discover how their zip code water use compares with other neighborhoods and other years.

Map Link: http://bit.ly/LAWaterStoryMap



"The Story Map of Los Angeles" explores what powers LA and how LA will power its future more cleanly.

http://bit.ly/LAEnergyStoryMap

Appendix L

Date/Time	Tweet text	Impressions	Engagements	Engagement Rate	Retweets	Likes
2017-01-21 01:30 +0000	We love and need the rain but conservation isn't over! @LADWP @EPA https://t.co/fGs8pmcciS	1749	39	5.77%	2	4
2017-01-22 23:00 +0000	It falls from the sky, but most of our water is a 'Desert Delivery' @LADWP https://t.co/gCnfIsrIoX	1008	34	6.83%	1	1
2017-01-24 23:01 +0000	Kid-friendly climate change, water, energy, and natural gas conservation information and games from NASA @LADWP https://t.co/TvY6LDFBKC	990	25	5.06%	3	3
2017-01-26 23:01 +0000	Fix that Drip! Calculate how much a leaking faucet wastes @ladwp https://t.co/Mse1hHZFuD	617	66	21.67%	0	2
2017-01-31 23:02 +0000	Don't 'Pretend' water doesn't need to be conserved because of a little rain! @LADWP https://t.co/3jnBrcjPJo	404	3	1.52%	0	2
2017-02-02 23:01 +0000	FREE #waterconservation tools for kitchen, bathroom, and shower @LADWP #CAdrought https://t.co/lINQ9Vdu3k	601	8	2.19%	2	3
2017-02-07 23:01 +0000	Home Energy Improvement Program (HEIP) - @LADWP can help you reduce your water & energy costs #CADrought @LADWP https://t.co/imH7LuYEn7	528	3	1.12%	0	1
2017-02-17 23:01 +0000	Just by turning off the tap while you brush your teeth, you can save up to 8 gallons of water! @ladwp https://t.co/639SdBNS4(	654	6	1.61%	2	4
2017-02-21 23:01 +0000	Report #waterwaste! waterwaste@ladwp.com #CAdrought https://t.co/E86AhIKNHd	1238	9	0.87%	5	3
2017-02-23 23:01 +0000	Learn to estimate #water and energy usage to determine ways to save @LADWP #bewaterwise https://t.co/idwYAMpveQ	568	2	0.71%	0	2
2017-02-28 23:01 +0000	Don't let reusable water go down the drain! Capture #graywater from shower, sinks & washing machine. @LADWP https://t.co/t8lZ5PKOq(	501	1	0.37%	0	1
2017-03-03 23:01 +0000	SAVE 2.5 gallons per minute by not letting #water run while doing dishes @LADWP #bewaterwise #CAdrought https://t.co/yDVQ7jNwlp	519	1	0.36%	0	1
2017-03-07 23:01 +0000	Run the dishwasher only when full to #savewater and energy @LADWP #bewaterwise https://t.co/Pyh8tzJYLv	643	7	2.07%	0	4
2017-03-10 23:01 +0000	Wash fruits and vegetables in a pan of water instread of running the tap @LADWP #water #bewaterwise https://t.co/a3bfiEeKRM	544	9	3.31%	2	3
2017-03-14 22:01 +0000	Help your school or community center get #freetrees! Go to https://t.co/4rwFQcjCaY for more information @LADWP https://t.co/wkZsfmcXXt	644	4	1.16%	1	2
2017-03-21 22:01 +0000	Take the virtual home tour to learn dozens of ways to #savewater and energy @LADWP https://t.co/ZHwuUe26Hb	925	4	0.55%	2	2
2017-03-24 22:01 +0000	Find out the top 5 actions to #savewater, energy and money! @LADWP #bewaterwise https://t.co/VkKugoU25M	435	1	0.43%	0	1
2017-03-27 22:01 +0000	Learn how to build a #EnergyStar home! @LADWP https://t.co/aIRLkhVDSz	426	3	1.40%	0	1
2017-03-31 22:01 +0000	For lots of tips on how to #savewater go to https://t.co/xISHWKx3eI @LADWP #bewaterwise https://t.co/7GJvwxZnIB	432	2	0.88%	0	1
2017-04-04 22:01 +0000	Check out the Water-Energy-Climate Calculator and learn ways to reduce #water and energy use @LADWP #bewaterwise https://t.co/LSesC1mjS.	533	4	1.50%	0	2
2017-04-07 22:01 +0000	Fix that leaking faucet to save 20 gallons of #water a day @LADWP #bewaterwise #CAdrought https://t.co/gqjg0MKtHS	441	6	2.55%	0	6
2017-04-11 22:01 +0000	Don't let your #graywater go down the drain! @LADWP #CAdrought https://t.co/R7SGoGA5i7	519	2	0.77%	0	2
2017-04-14 22:01 +0000	Use a broom to clean the sidewalk or driveway and save 150 gallons or more each time @LADWP #CAdrought https://t.co/D8RUhXxVxr	956	8	1.39%	1	6
2017-04-18 22:01 +0000	A minute in the shower uses 2.5 gallons. Just a 1 or 2 minute reduction saves 375 gallons a month @LADWP #CAdrought https://t.co/gqjg0MKtHS	6262	32	0.92%	6	7
2017-04-21 22:01 +0000	Home Energy Improvement Program (HEIP) - @LADWP can help you reduce your water & energy costs #Cadrought https://t.co/8yQyQvgJ1m	682	5	1.48%	0	5
2017-05-12 22:01 +0000	Does your electrical bill make you sweat?? @LADWP https://t.co/GcEQLvKgiY	682	5	1.48%	0	5
		23501	289	2.61%	27	74

Appendix M

FOR IMMEDIATE RELEASE

Contact: Julie Du Brow, Communications
310-922-1301 ph
jdubrow@santamonicabay.org

The Bay Foundation Offers 6th-8th Graders, Teachers Fun & FREE Tools to Check and Change Conservation Habits

Website Featuring Open-Access Activity Packet is Now Available

LOS ANGELES (May 18, 2017) The Bay Foundation (TBF) has launched a website open to all educators who work with 6th, 7th and 8th graders, providing a complete activity packet of tools to help students first identify their water and energy use, and then educate them to effect a conservation-focused change in their habits. This behavior-impacting program with its accompanying materials is funded by a grant from LADWP's Community Partnership Program, and is the second such partnership grant through which TBF has created conservation-education tools free to the public.

The new website is the final phase of the grant's objective to promote energy, water, and natural gas conservation throughout L.A. Unified School District (LAUSD) by implementing innovative educational opportunities and outreach strategies that can change habits at a community level. Teachers can use the online Activity Packet—as it fits into their class plan—to track progress or offer incentives for changing habits, or students can complete them without supervision and in conjunction with LAUSD curriculum (as a supplemental activity).

"I'm very pleased with the structure and execution of this project. The curriculum and supporting materials clearly explain where our water and electricity come from while empowering the students to evaluate and determine how they can conserve both at home and in their daily activities," states TBF Executive Director Tom Ford. "Furthermore, the direct connection to environmental impacts from water and energy infrastructure are conveyed in a creative and captivating manner. This project delivers the application and knowledge that we should conserve, that we can conserve, and that we each make a difference when we take steps to do so."

Prior to the website launch, TBF's Watershed Program staff Melodie Grubbs and Rod Abbott worked with classes in person. They visited select middle schools, and talked about conservation needs and solutions using tools now on the website:

- engaging infographics about water, energy, native CA plants, and climate change
- interactive story maps, including about L.A.'s water history

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Teachers then integrated the packet's activities into their curriculum over about 4 weeks, offering students the opportunity to earn up to 10 badges (i.e. Water Footprint Badge). When Grubbs and Abbott returned, they followed up on water and energy conservation efforts, reviewed why it's important to conserve water and energy in Los Angeles, and had the students re-take the survey to measure any change in attitude and behavior. They collected the students' activity packets and those who completed activities and earned badges were entered in a prize drawing. Prizes included solar rover and salt-water powered robot kits.

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To visit the website: http://www.santamonicabay.org/energy-and-water-conservation/. For any questions about the program, contact Rod Abbott at rabbott@santamonicabay.org.

About The Bay Foundation (TBF)
The Bay Foundation, also known as the Santa Monica Bay Restoration Foundation, is a 501(c) 3 non-profit environmental group founded in 1990 to restore and enhance the Santa Monica Bay (from the LA-Ventura county line to the Palos Verdes Peninsula) and local coastal waters. The Foundation is the non-profit partner of the Santa Monica Bay Restoration Commission, raising and expending funds for research, education, planning, cleanup efforts and other priorities identified in the Commission's *Santa Monica Bay Restoration Plan*. As advocates for the Bay, TBF works collaboratively with a broad group of stakeholders, including government agencies, industry, environmental groups, and scientists, to implement innovative policies and projects that clean up the waterways, create green spaces and natural habitats in the Los Angeles region. TBF conducts research and mentors student interns and volunteers through its Center for Santa Monica Bay Studies at Loyola Marymount University. (www.santamonicabay.org)

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Home » Community Calendar » Conservation Tech for Kids

Conservation Tech for Kids

June 9, 2017 7:00 am by: Staff Report Category: Community Calendar, News, Things To Do Leave a comment A+ / A-

By Staff Writer

The Bay Foundation (TBF) has launched a website open to all educators who work with 6th, 7th and 8th graders, providing a complete activity packet of tools to help students first identify their water and energy use, and then educate them to effect a conservation-focused change in their habits.

The behavior-impacting program with its accompanying materials is funded by a grant from LADWP's Community Partnership Program, and is the second such partnership grant through which TBF has created conservation-education tools free to the public.

The new website is the final phase of the grant's objective to promote energy, water, and natural gas conservation throughout L.A. Unified School District (LAUSD) by implementing innovative educational opportunities and outreach strategies that can change habits at a community level. Teachers can use the online Activity Packet — as it fits into their class plan — to track progress or offer incentives for changing habits, or students can complete them without supervision and in conjunction with LAUSD curriculum (as a supplemental activity).

"I'm very pleased with the structure and execution of this project. The curriculum and supporting materials clearly convey where our water and electricity come from, along with infrastructure environmental impacts, while empowering the students to evaluate and determine how they can conserve both at home and in their daily activities," states TBF Executive Director Tom Ford. "This project creatively delivers the application and knowledge that we should conserve, that we can conserve, and that we each make a difference when we take steps to do so."

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To visit the website: santamonicabay.org/energy-and-water-conservation

Video: "Water and Energy Conservation for LA Kids"

Tags : kids | Middle School | tech | Website LEAVE A COMMENT

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Home » Community Calendar » Bay Foundation Offers 6th-8th Graders, Teachers Free Tools to Check and Change Conservation Habits

Bay Foundation Offers 6th-8th Graders, Teachers Free Tools to Check and Change Conservation Habits

May 19, 2017 8:14 am by: Staff Report Category: Community Calendar, Education, Events + Exhibits, News, Things To Do Leave a comment A+ / A-

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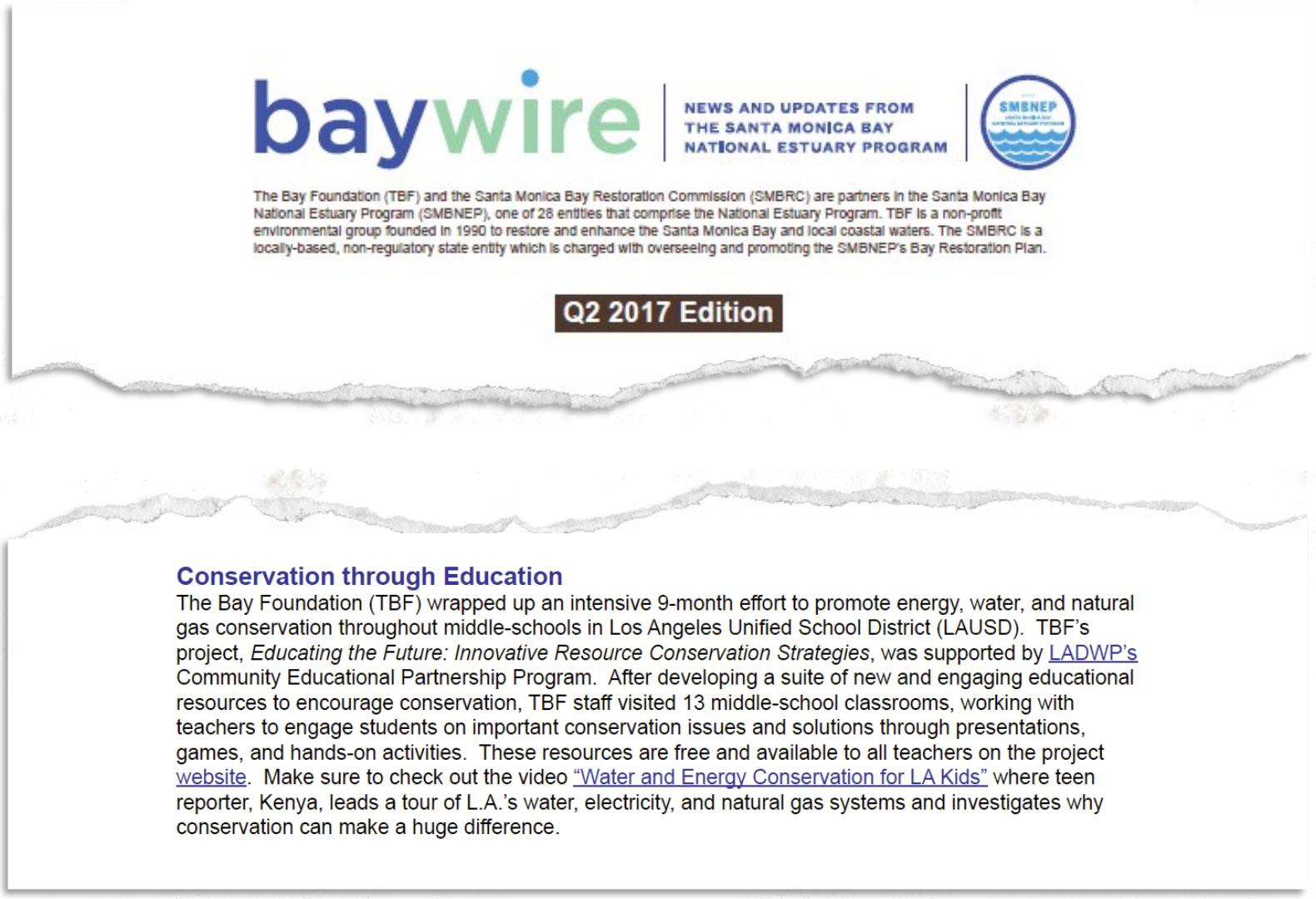
Tags : Bay Foundation | conservation | education | Free | Habits LEAVE A COMMENT

Appendix O



baywire

NEWS AND UPDATES FROM THE SANTA MONICA BAY NATIONAL ESTUARY PROGRAM

SMBNEP

The Bay Foundation (TBF) and the Santa Monica Bay Restoration Commission (SMBRC) are partners in the Santa Monica Bay National Estuary Program (SMBNEP), one of 28 entities that comprise the National Estuary Program. TBF is a non-profit environmental group founded in 1990 to restore and enhance the Santa Monica Bay and local coastal waters. The SMBRC is a locally-based, non-regulatory state entity which is charged with overseeing and promoting the SMBNEP's Bay Restoration Plan.

Q2 2017 Edition

Conservation through Education

The Bay Foundation (TBF) wrapped up an intensive 9-month effort to promote energy, water, and natural gas conservation throughout middle-schools in Los Angeles Unified School District (LAUSD). TBF's project, *Educating the Future: Innovative Resource Conservation Strategies*, was supported by LADWP's Community Educational Partnership Program. After developing a suite of new and engaging educational resources to encourage conservation, TBF staff visited 13 middle-school classrooms, working with teachers to engage students on important conservation issues and solutions through presentations, games, and hands-on activities. These resources are free and available to all teachers on the project website. Make sure to check out the video "Water and Energy Conservation for LA Kids" where teen reporter, Kenya, leads a tour of L.A.'s water, electricity, and natural gas systems and investigates why conservation can make a huge difference.

Released May 2017 to The Santa Monica Bay Restoration Commission listserv.

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The Bay Foundation ›

Water & Energy Conservation in LA for Kids

Created: Mar 17, 2017 • Published: May 19, 2017 • Duration: 11:34 • Privacy setting: Public

VIDEO

Mar 17, 2017 – May 31, 2017

The Bay Foundation

Created: Jul 23, 2013 • Videos: 57

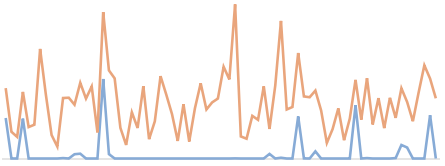
CHANNEL

Mar 17, 2017 – May 31, 2017

Watch time (minutes)

Minutes

101
1,231



Average view duration

Minutes

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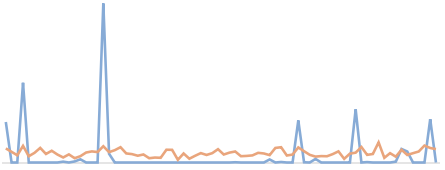

Views

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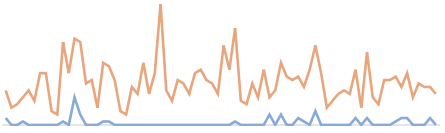
940



Likes	Dislikes	Comments	Shares	Videos in playlists	Subscribers
0 2	0 1	0 0	15 50	0 2	0 2

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

Welcome!

Thank you for taking a couple minutes to fill out this survey.**The Bay Foundation**, whose mission is to enhance the Santa Monica Bay watershed, improve water quality, and rehabilitate natural resources, and the **Los Angeles Department of Water and Power**, the largest municipal utility in the United States, have come together to conserve water and energy in the LA area. This survey will help us understand what the community is already doing and determine some of the barriers to conservation.

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 1. Thoughts about energy and water conservation**

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Not Applicable
I do my best to conserve energy.	◯	◯	◯	◯	◯	◯
I do my best to conserve water.	◯	◯	◯	◯	◯	◯
I encourage my family and friends to conserve water and/or energy.	◯	◯	◯	◯	◯	◯
Water rates should be increased for those who use too much.	◯	◯	◯	◯	◯	◯
I would email or call a tip line if I saw water waste (e.g., sprinklers watering the side walk).	◯	◯	◯	◯	◯	◯

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 2. What is your living situation?**

- ◯ I own a house.
- ◯ I rent a house.
- ◯ I own a condo or townhouse.
- ◯ I rent an apartment or room.

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 3. What ways do you conserve energy? (select all that apply)**

- [ ] In the summer, I keep my air conditioner set at 78 degrees or higher.
- [ ] I use energy-efficient appliances.
- [ ] I use energy-efficient lighting.
- [ ] My home has solar panels.
- [ ] I unplug unused electronics and appliances.
- [ ] My home is insulated.
- [ ] There are obstacles or reasons I don’t conserve energy.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 4. What obstacles or reasons prevent you from conserving energy? (select all that apply)**

- [ ] Conserving energy limits my lifestyle.
- [ ] I can't afford energy-efficient appliances and devices.
- [ ] My energy bill is affordable.
- [ ] It's the government's problem.
- [ ] I'm not familiar with rebates and incentives.
- [ ] I don't know how.
- [ ] It didn't occur to me.
- [ ] There are no obstacles or reasons for me not to conserve energy.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 5. What ways do you conserve water? (select all that apply)**

- [ ] I use a low-flow showerhead.
- [ ] I turn off the water while I brush my teeth.
- [ ] I take short showers (about 5 minutes).
- [ ] I water my lawn no more than twice a week.
- [ ] I water my lawn less than once a week.
- [ ] I installed a rain barrel or cistern.
- [ ] I installed Weather-Based Irrigation Controllers for my landscaping.
- [ ] There are obstacles or reasons I don't conserve water.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 6. What obstacles or reasons prevent you from conserving water? (select all that apply)**

- [ ] It's too difficult.
- [ ] My water bill is affordable.
- [ ] It doesn't concern me.
- [ ] I don't know how.
- [ ] It's the government's problem.
- [ ] I'm not aware with rebates & incentive that can help me conserve water.
- [ ] It didn't occur to me.
- [ ] There are no obstacles or reasons for me not to conserve water.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 7. What ways do you conserve energy? (select all that apply)**

- [ ] I keep my air conditioner set at 78 degrees or higher.
- [ ] I use energy-efficient appliances.
- [ ] I use energy-efficient lighting.
- [ ] I unplug unused electronics.
- [ ] I do not pay for electricity.
- [ ] There are obstacles or reasons I don’t conserve energy.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 8. What obstacles or reasons prevent you from conserving energy? (select all that apply)**

- [ ] It's too much trouble.
- [ ] It's too expensive.
- [ ] My energy bill is affordable.
- [ ] It's the government's problem.
- [ ] I'm not familiar with rebates and incentives that can help me conserve energy.
- [ ] I don't know how.
- [ ] It didn't occur to me.
- [ ] There are no obstacles or reasons for me not to conserve energy.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 9. What ways do you conserve water? (select all that apply)**

- [ ] I use a low-flow showerhead or other low-flow devices.
- [ ] I turn off water when I brush my teeth.
- [ ] I take short showers (about 5 minutes).
- [ ] I don't let the water run when I do the dishes.
- [ ] I let my landlord know when there are faucet and toilet leaks.
- [ ] There are obstacles or reasons I don't conserve water .
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 10. What obstacles or reasons prevent you from conserving water? (select all that apply)**

- [ ] It's too difficult.
- [ ] It didn't occur to me.
- [ ] My water bill is affordable.
- [ ] I don't have any choice.
- [ ] I don't pay for my water.
- [ ] It's the government's problem.
- [ ] I don't know how.
- [ ] There are no obstacles or reasons for me not to conserve water.
- [ ] Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 11. Do you have a lawn?**

- ○ Yes
- ○ No

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 12. Your thoughts about lawns and alternatives.**

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Not Applicable
I want to install a native garden and/or rain garden.	◯	◯	◯	◯	◯	◯
I want to install a native garden and/or rain garden because of increased water costs.	◯	◯	◯	◯	◯	◯
I will install a native garden and/or rain garden if there are rebates and incentives.	◯	◯	◯	◯	◯	◯
I will remove my lawn if water rates increase.	◯	◯	◯	◯	◯	◯
A lawn is inappropriate for Southern California's climate.	◯	◯	◯	◯	◯	◯
I won't water my lawn until the drought is over.	◯	◯	◯	◯	◯	◯
I follow the city's lawn watering regulations	◯	◯	◯	◯	◯	◯
I have no interest in removing my lawn.	◯	◯	◯	◯	◯	◯

13. If you Agreed or Strongly Agreed you had no interest in removing your lawn, please explain.

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 14. How many days a week do you water your lawn?**

◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4+

*** 15. What does your lawn look like?**

◯ Green

◯ Brown because I don't water it

◯ Brown even though I do water it

◯ Other (please specify)

*** 16. I have a lawn in the front yard and the back yard.**

- ◯ Yes
- ◯ No

Other (please specify)

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

*** 17. Instead of a lawn I have... (select all that apply)**

- ☐ A native garden
- ☐ A rock garden
- ☐ A rain garden.
- ☐ An edible food garden
- ☐ A flower garden
- ☐ Concrete or hardscape
- ☐ Dirt
- ☐ I have no yard.
- ☐ Other (please specify)

18. My child taught me new things about water and/or energy conservation I didn't know.

- ◯ Strongly agree
- ◯ Agree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ Decline to state

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

Energy & Water Conservation PSAs

Please watch three energy and water conservation PSAs we produced in 2015.

1. Power Spinning
2. Desert Delivery
3. Pretend

Conservation Survey for Parents or Guardians of LAUSD Middle School Students

OPTIONAL

19. What is your gender?

- ◯ Female
- ◯ Male

20. What is your age?

- ◯ 18 to 24
- ◯ 25 to 34
- ◯ 35 to 44
- ◯ 45 to 54
- ◯ 55 to 64
- ◯ 65 to 74
- ◯ 75 or older

21. What is your relationship status?

- ◯ Single
- ◯ Married
- ◯ Divorced
- ◯ Separated
- ◯ Widowed

Other (please specify)

22. What is you race or ethnicity?

- ◯ White
- ◯ Hispanic or Latino
- ◯ Black or African-American
- ◯ American Indian or Alaskan Native
- ◯ Asian
- ◯ Native Hawaiian or other Pacific Islander
- ◯ From multiple races

23. In what ZIP code is your home located? (enter 5-digit ZIP code; for example, 00544 or 94305)

Thank you for taking a little time to take this survey!