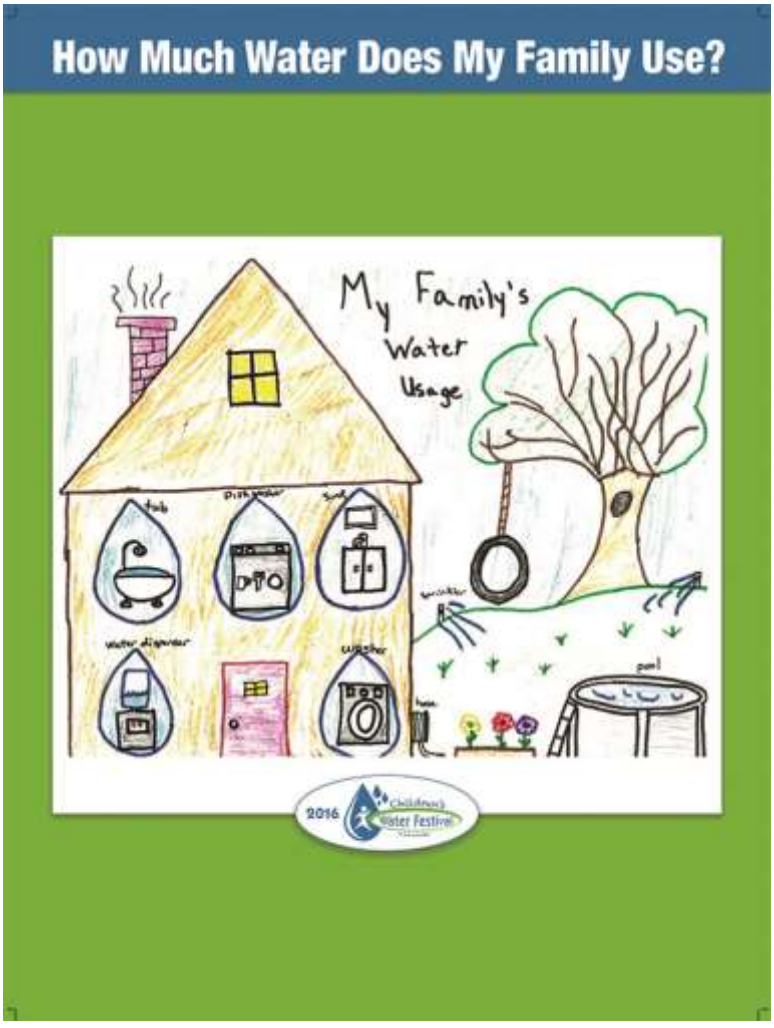
Children's Water Festival

Rio Rancho, 2016



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Executive Summary

The 2016 Children's Water Festival (Festival) was held Monday, October 24th and Tuesday, October 25th at the Santa Ana Star Center in Rio Rancho. An estimated 1,481 fourth-grade students attended from 60 classrooms; all of the elementary schools in Rio Rancho Public Schools, Bernalillo Elementary School, and St. Thomas Aquinas. The students attend three 30 minute presentations in a half-day format. Fifteen classes representing three to four schools were on-site at one time. Schools attended a morning or afternoon program.

The 15 presentations represented 18 professional organizations that ranged from federal, state, regional governments, and private industry. The organizations all represented water interests and focused on subjects such as the water cycle, water quantity and conservation, water distribution, and water quality and pollution.

Students were evaluated on basic water knowledge before and after the Festival. On average, for all testing returned, **the students showed an increase in knowledge of 14 percentage points on the post testing**.

One teacher from Colinas del Norte wrote, "This year's festival was much better. Stations were more engaging, hands-on and presenters were easy to listen to."

The Festival costs an estimated $23,000. The City of Rio Rancho contributed $10,000 to the Festival and additional funding was raised through the New Mexico Water Conservation Alliance 501(c)(3). Festival sponsors include: CH2M, Waste Management, and Sandoval County.

Introduction

The Children's Water Festival (Festival) has been taking place in Rio Rancho since 2007. The 2010 Festival was the first event hosted by the City of Rio Rancho's Water Conservation Office. This report is for the 2016 Festival; the seventh event hosted by the Water Conservation Office. As in years past, the Festival was held at the Santa Ana Star Center. There were an estimated 1,481 students attending from 60 classrooms; all of the public elementary schools in Rio Rancho, the elementary school from the Town of Bernalillo, and one private elementary school, St. Thomas Aquinas. The event was held on October 24th and 25th, 2016.

Purpose and Intent

The principal focus of the Festival is to educate fourth-grade school children about water and its relationship to humans, animals and other natural resources in a fun and interactive atmosphere. The Festival's vision is to:

- Introduce students and teachers to new ideas, options, and solutions so they will conserve and protect water for the future,
- Lay the foundation for further learning,
- Reach as many students and teachers as possible.

Public participation is essential to successful water conservation, and educating the public promotes better water conservation planning and implementation. Early education influences the future acceptance of water conservation concepts. This early education experience also has shown that training efforts affected behavioral changes and improved water use practices. Water conservation goals are only as effective as water users' willingness to adopt and implement appropriate water conservation measures. Through special training activities, water users are taught proper water use practices and techniques. Efficient use of water supplies decreases waste and prevents degradation of water quality leading to healthier ecosystems for fish and wildlife, including locally listed endangered species, such as, the Rio Grande Silvery Minnow (*Hybognathus amarus)* and the Southwestern Willow Flycatcher (*Empidonax traillii extimus*).

The Festival has been designed specifically to introduce and explain new and unfamiliar water management tools to present and future water users and managers. Research concerning water conservation education indicates the targeted group of the Festival, fourth-grade students, is ideal for achieving long-term goals. Through sharing water conservation and water quality tools at home and with extended family, the estimated 1,500 participants (students, teachers, and chaperones) represent a potential audience of 10,000 to 15,000 people throughout the Festival program.

A series of activities that cover a wide range of core curriculum areas were presented at the Festival. These activities included language arts, mathematics, science, social studies, visual arts, and health/wellness, all of which are tied to water conservation, water quality, and water quantity in the arid Southwest desert.

The updated Water Resources Management Plan (Plan), adopted by the City of Rio Rancho Governing Body in 2014, details water efficiencies and water conservation measures to be taken by the City to better manage the existing water supplies. Policy E.4 of the Plan sets forth this initiative: "Continue consulting with and improving the partnership with Rio Rancho Public Schools to implement a robust water resources educational curriculum."

Additionally, the City of Rio Rancho Strategic Plan was formally adopted by the City of Rio Rancho Governing Body on March 25, 2009. One important element of the Infrastructure Strategies section pertains to water sustainability and conservation to support growth and development of the City.

"The Children's Water Festival is a great way for the Water Conservation Office staff to concentrate water-related education to local fourth-grade students." An Enchanted Hills Elementary School teacher commented, "They loved each activity (water cycle, whether weather, and leaky faucet). My students were highly engaged."

Funds

Festival Cost

The Festival costs are listed in the table below. Please note that the cost for the Santa Ana Star Center is only for the personnel time. Any monies raised from sponsors that exceed the Festival costs will be used for the 2017 Festival. The cost per student for the Festival was about $15.65, and includes the Festival T-shirt and transportation.

Cost Description	**Amount**
Santa Ana Star Center	$2,093.33
Pipe and Drape rental	$3,660.70
Catering for volunteers & presenters	$4,278.00
Buses (RR & BES)	$3,862.00
T-shirts with art/logos (1,577 shirts)	$7,688.45
Shadow box (for T-shirt winner)	$23.06
Banner for Display Stand	$75.00
Posters	$112.00
Copy paper (pre & post-tests)	$86.84
White paper for T-shirt artwork	$74.58
Thank you cards	$84.61
Fiscal Sponsor	$1,000.00
Thank you gifts for steering committee	$93.58
Badge holders	27.90
Plastic bags to hold T-shirts	16.97
Total	**$23,177.02**

Sponsorships

Through its fiscal partner, the New Mexico Water Conservation Alliance, a 501(c)3 non-profit organization, the City of Rio Rancho was able to secure several sponsors to fund the Festival. Additionally, the City sponsored $10,000 for the Festival.

A heartfelt thank you goes to these valuable partners for the Festival!

Steering Committee

The Festival was driven by a diverse steering committee. The core group contained members from:

- City of Rio Rancho's Water Conservation Office
- City of Rio Rancho's Keep Rio Rancho Beautiful Office
- CH2M
- Sandoval County Master Gardeners
- Sandoval County Master Composters
- Southern Sandoval County Arroyo Flood Control Authority
- New Mexico Environment Department – Surface Water Quality Bureau
- Citizen volunteers

Design of Festival

Students attend the Festival for a half day program which included three presentations to ensure participation by all Rio Rancho fourth graders. There is a transition period in the middle of the day where the morning classes are getting onto the buses close to the same time the afternoon classes are arriving.

Teachers and students experienced the Festival in three parts: pre-Festival activities, the Festival itself, and post-Festival activities.

Pre-Festival Activities

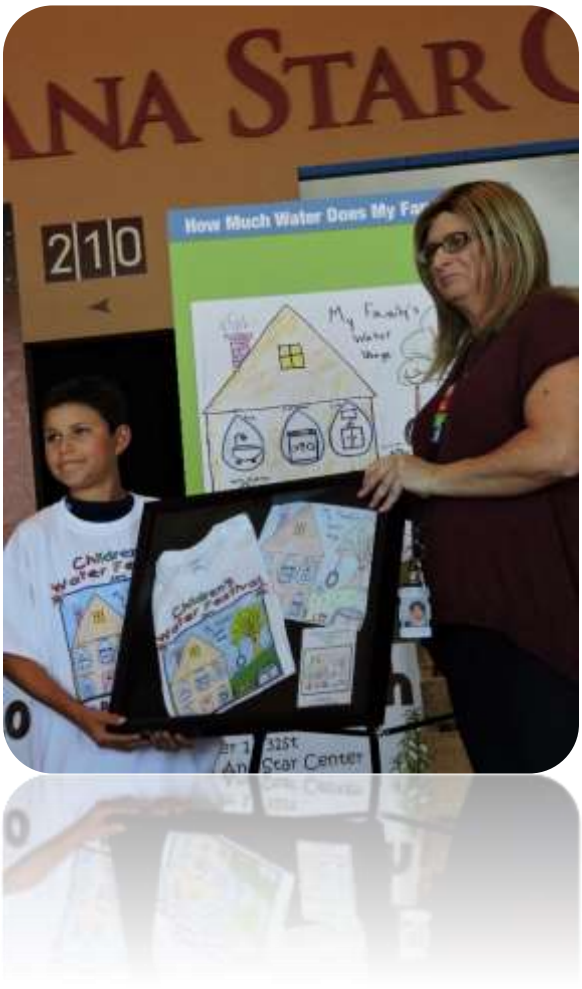
- Each school provides a lead fourth grade teacher who confirms their commitment to participate, provides the number and names of the teacher/classes and the number of anticipated students for each.
- Each school in Rio Rancho and Bernalillo are provided the information on how to participate in the student T-shirt artwork project; student art work is submitted to the City of Rio Rancho and a winner is selected. The 2015 theme was "What Makes My Water Dirty?"
- The City provided copies of the pre-Festival test to the schools and the teachers administered the test to the students. The post-Festival tests, printed on colored paper, were dropped off at the same time.
- Teachers received resource kit materials that included the T-shirts with miscellaneous items donated by our sponsors (e.g., pens, rulers).

Rio Rancho Children's Water Festival Event

- Students attending the Festival in the morning boarded buses at 9:15 a.m. at their school. Students attending the afternoon program boarded the buses at 11:30 a.m.
- The Water Festival ran from 9:45 a.m. through 1:40 p.m.
- Each class was met by a guide/timekeeper who escorted them to each of their three assigned presentations.

Students in My Water Footprint.

- Teachers turned in completed pre-Festival student tests and photo releases.
- Presentations lasted 30 minutes and topics included: water quality, water conservation, water cycle, wastewater, ecosystems, and built water infrastructure.
- All students received a Festival T-shirt. Jarren Villa from Cielo Azul Elementary was the winner of the T-shirt student artwork contest. His design was displayed on the front of the T-shirt and Festival sponsor logos were on the back.



Jarren Villa – T-shirt artwork winner with his teacher, Ms. Allis

Post-Festival Activities

- Post-Festival tests were completed by students.
- Tests and teacher evaluation forms were picked up by steering committee members.
- Teachers will receive a copy of this report with specific information on how their students did on the tests.

All aspects of the Festival planning and implementation were created with the *Big Water Questions* in mind. Each activity was categorized into one of three water themes, and each class attended one 30-minute activity in each of those themes. In addition, each presentation addressed at least one of the *Big Water Questions*, as well as the Festival's mission and objectives. The long-term outcome goal is that all elementary school students will be able to provide reasonable answers to these questions by the time they reach middle school.

Big Water Questions

- Why is water so important to life?
- How do all living things depend on each other?
- What is the water cycle?
- What is a watershed?
- Where does my drinking water come from?
- What makes water dirty?
- How much water does my family use?
- Who are the other water users in our society?
- How can *I* protect our water?
- Where does my water go?

Schools Attending the Festival

The following tables outline which teachers/schools attended. There were an estimated 1,481 students attending the Festival this year.

Elementary School	**Number of Teachers**	**Number of Students**
Bernalillo Elementary	6	135
Cielo Azul Elementary	6	159
Colinas del Norte Elementary	5	121
Enchanted Hills Elementary	5	117
Ernest Stapleton Elementary	6	172
Maggie Cordova Elementary	6	145
Martin Luther King Elementary	6	144
Puesta del Sol Elementary	6	129
Rio Rancho Elementary	4	112
Sandia Vista Elementary	4	94
St. Thomas Aquinas Elementary	2	51
Vista Grande Elementary	4	102
Totals	**60**	**1,481**

Festival Presentations

A Sandia Vista Elementary teacher wrote, “We loved the station with the 3 UNM students! They were very enthusiastic! They let the kids explore more than they talked.”

UNM presenter and students

NM Past and Present

Another Sandia Vista Elementary School teacher said, “The fossil activity was especially great because the presenters were enthusiastic and enjoyed the students.”

Each year the Festival relies on numerous professionals who volunteer their time to do the presentations. These professionals represent federal, state and regional government entities, local engineering firms, and the school district. They choose presentations that represented their missions or specialties. There were 15 presentations running simultaneously on both Day 1 and on Day 2. A description of all the presentations, the presenters and their contact information has been provided in Appendix A.

Volunteer Hours

The Water Festival could not be held without the assistance of a number of volunteers, presenters, and steering committee members. The table below presents an estimate of the in-kind volunteer hours.

Presenters	345 hours
Volunteers	285 hours
Steering Committee Meetings	44 hours
Total Hours	**674 hours**

Lessons Learned

Steering Committee Comments from the Festival

There were only a few comments from the steering committee including:

- Smoothest running festival yet
- Pipe and drape was up on Sunday making it better for committee members on Monday morning; more completed Sunday afternoon such as pinning booth names and numbers to the drape, putting all paperwork out, setting up the Water Jeopardy, etc.
- No water wizard or Otto the otter this year
- Both the UNM and NOAA presenters were great with the students
- The ABQ open space presenter had a bilingual person who spoke Spanish with the Bernalillo Elementary students
- Minor food issues including: shells in the eggs (Monday), creamer out of date and bad (Monday), no coffee, forks, and sugar (Tuesday)
- Suggestions for next year: balloons on top the water stations, microphones like the classrooms use, reminder to teachers of the importance of the photo release forms, alter schedule so buses can pick up a bit earlier in the afternoon

Festival Event

The two days of the Festival ran very smooth. All adult participants were encouraged to provide feedback to assist in improving the Festival. One of the biggest criticisms from past Festivals held at the Santa Ana Star Center is that it can be hard to hear in the large arena. However, the Santa Ana Star Center is the only venue facility large enough to hold all of the Festival presentation in Rio Rancho. The Festival organizers will continue to work on ways to improve the noise issues in the arena.

Appendix A

Teacher/Class Rotation Schedule

Booth	MON Oct 24 morning		9:45 – 10:15	10:20 – 10:50	10:55 – 11:25
#	Presentation	Category			
1	RG Bosque Water Cycle - RGNC	Water Cycle	Lowe E. Stapleton (29)	Wiberg Colinas del Norte (25)	Griffin Colinas del Norte (24)
2	Watersheds & Stormwater - SNL	Watersheds	Zuniga E. Stapleton (29)	Lowe E. Stapleton (29)	Rojas/Monclova/Estrada E. Stapleton (26)
3	NM Past and Present – NM Cultural Services	Historical Perspective	Marcotte E. Stapleton (29)	Vargas Colinas del Norte (24)	Lowe E. Stapleton (29)
4	Water Jeopardy – Bohannan Huston	Water Cycle/General	Rojas/Monclova/Estrada E. Stapleton (26)	Paiz Rio Rancho (26)	Gilbert Rio Rancho (27)
5	The Incredible Water Journey - FS	Water Cycle	Smith/Reyes Rio Rancho (32)	Rojas/Monclova/Estrada E. Stapleton (26)	Paiz Rio Rancho (26)
6	Watersheds & Aquifers – UNM	Watersheds	Randall Colinas del Norte (24)	Lautt E. Stapleton (29)	Reichbach E. Stapleton (30)
7	Rolling River – Ciudad SWCD	Watersheds	Menor Rio Rancho (27)	Smith/Reyes Rio Rancho (32)	Lautt E. Stapleton (29)
8	Bio Van – City of ABQ	Ecosysems	Welch Colinas del Norte (24)	Zuniga E. Stapleton (29)	Smith/Reyes Rio Rancho (32)
9	Weather or Not - NOAA	Water Cycle/Weather	Vargas Colinas del Norte (24)	Welch Colinas del Norte (24)	Menor Rio Rancho (27)
10	My Water Footprint - OSE	General Water	Paiz Rio Rancho (26)	Marcotte E. Stapleton (29)	Vargas Colinas del Norte (24)
11	Dirty to Drinkable – CH2M	Water Quality	Griffin Colinas del Norte (24)	Gilbert Rio Rancho (27)	Marcotte E. Stapleton (29)
12	Keep the Rio Grande – Stormwater Team	Watersheds	Reichbach E. Stapleton (30)	Menor Rio Rancho (27)	Welch Colinas del Norte (24)
13	Leaky Faucet – RRPS	Conservation	Gilbert Rio Rancho (27)	Reichbach E. Stapleton (30)	Wiberg Colinas del Norte (25)
14	Incredible Journey – NMED	Water Cycle	Lautt E. Stapleton (29)	Randall Colinas del Norte (24)	Zuniga E. Stapleton (29)
Outside	Water Energy Nexus - RRPS	General Water	Wiberg Colinas del Norte (25)	Griffin Colinas del Norte (24)	Randall Colinas del Norte (24)

	15 Presenters		**15 Classes**		

Booth	**MON Oct 24 afternoon**		**12:00 – 12:30**	**12:35 – 1:05**	**1:10 – 1:40**
#	**Presentation**	**Category**			
1	RG Bosque Water Cycle - RGNC	Water Cycle	Ruybal M.L. King (25)	Filkins M.L. King (24)	Dengler M.L. King (22)
2	Watersheds & Stormwater - SNL	Watersheds	Lawton St. Thomas Aquinas (25)	Steiner M. Cordova (26)	Summerbell M.L. King (24)
3	NM Past and Present – NM Cultural Services	Historical Perspective	Salaz M.L. King (24)	Valdez M. Cordova (20)	Zirpel M. Cordova (26)
4	Water Jeopardy – Bohannan Huston	Water Cycle/General	Pearson M.L. King (25)	Lawton St. Thomas Aquinas (25)	Steiner M. Cordova (26)
5	The Incredible Water Journey - FS	Water Cycle	Summerbell M.L. King (24)	Ruybal M.L. King (25)	Valdez M. Cordova (20)
6	Watersheds & Aquifers – UNM	Watersheds	Hanosh M. Cordova (22)	Herrera St. Thomas Aquinas (26)	Filkins M.L. King (24)
7	Rolling River – Ciudad SWCD	Watersheds	Steiner M. Cordova (26)	Summerbell M.L. King (24)	Lawton St. Thomas Aquinas (25)
8	Bio Van – City of ABQ	Ecosysems	Valdez M. Cordova (20)	Pearson M.L. King (25)	Salaz M.L. King (24)
9	Weather or Not - NOAA	Water Cycle/Weather	Dengler M.L. King (22)	Zirpel M. Cordova (26)	Ruybal M.L. King (25)
10	My Water Footprint - OSE	General Water	Wade M. Cordova (25)	Dengler M.L. King (22)	Pearson M.L. King (25)
11	Dirty to Drinkable – CH2M	Water Quality	Herrera St. Thomas Aquinas (26)	Wade M. Cordova (25)	Alderson M. Cordova (26)
12	Keep the Rio Grande – Stormwater Team	Watersheds	Alderson M. Cordova (26)	Salaz M.L. King (24)	
13	Leaky Faucet – RRPS	Conservation	Filkins M.L. King (24)		Wade M. Cordova (25)
14	Incredible Journey – NMED	Water Cycle		Hanosh M. Cordova (22)	Herrera St. Thomas Aquinas (26)
Outside	Water Energy Nexus - RRPS	General Water	Zirpel M. Cordova (26)	Alderson M. Cordova (26)	Hanosh M. Cordova (22)
	15 Presenters		**14 Classes**		

Booth	TUE Oct 25 morning		9:45 – 10:15	10:20 – 10:50	10:55 – 11:25
#	**Presentation**	**Category**			
1	RG Bosque Water Cycle - RGNC	Water Cycle	Longbottom Puesta del Sol (19)	Herrera Puesta del Sol (22)	Lockhart Vista Grande (26)
2	Bosque Wildlife Safari	Ecosystems	Miller/Agena Puesta del Sol (22)	Kauffman Vista Grande (26)	Mandich Enchanted Hills (23)
3	NM Past and Present – NM Cultural Services	Historical Perspective	Kauffman Vista Grande (26)	Miller/Agena Puesta del Sol (22)	Wiebelhaus Enchanted Hills (23)
4	Water Jeopardy – Bohannan Huston	Water Cycle/General	Straley Puesta del Sol (19)	Haack Enchanted Hills (24)	Miller/Agena Puesta del Sol (22)
5	The Incredible Water Journey - FS	Water Cycle	Hunt Enchanted Hills (22)	Learn Puesta del Sol (23)	Marsh Enchanted Hills (25)
6	Watersheds & Aquifers – UNM	Watersheds	Wiebelhaus Enchanted Hills (23)	Longbottom Puesta del Sol (19)	Herrera Puesta del Sol (22)
7	Rolling River – Ciudad SWCD	Watersheds	Lockhart Vista Grande (26)	Hunt Enchanted Hills (22)	Straley Puesta del Sol (19)
8	Bio Van – City of ABQ	Ecosysems	Ramos Vista Grande (26)	Wiebelhaus Enchanted Hills (23)	Learn Puesta del Sol (23)
9	Weather or Not - NOAA	Water Cycle/Weather	Armendariz Puesta del Sol (23)	Straley Puesta del Sol (19)	Ramos Vista Grande (26)
10	My Water Footprint - OSE	General Water	Herrera Puesta del Sol (22)	Armendariz Puesta del Sol (23)	Kauffman Vista Grande (26)
11	Dirty to Drinkable – CH2M	Water Quality	Mandich Enchanted Hills (23)	Marsh Enchanted Hills (25)	Mondragon/Dodson Vista Grande (24)
12	Keep the Rio Grande – Stormwater Team	Watersheds	Haack Enchanted Hills (24)	Ramos Vista Grande (26)	Armendariz Puesta del Sol (23)
13	Leaky Faucet – RRPS	Conservation	Marsh Enchanted Hills (25)	Mondragon/Dodson Vista Grande (24)	Hunt Enchanted Hills (22)
14	Incredible Journey – NMED	Water Cycle	Mondragon/Dodson Vista Grande (24)	Lockhart Vista Grande (26)	Haack Enchanted Hills (24)
Outside	Water Energy Nexus - RRPS	General Water	Learn Puesta del Sol (23)	Mandich Enchanted Hills (23)	Longbottom Puesta del Sol (19)
	15 Presenters		**15 Classes**		

Booth	TUE Oct 25 afternoon		12:00 – 12:30	12:35 – 1:05	1:10 – 1:40
#	**Presentation**	**Category**			
1	RG Bosque Water Cycle - RGNC	Water Cycle	Crunk Cielo Azul (27)	VonOsten Sandia Vista (24)	Mandato Cielo Azul (27)
2	Bosque Wildlife Safari	Ecosystems	Messenger Cielo Azul (25)	Mandato Cielo Azul (27)	Chavez Bernalillo (22)
3	NM Past and Present – NM Cultural Services	Historical Perspective	VonOsten Sandia Vista (24)	Lujan Bernalillo (23)	Glauvitz Sandia Vista (23)
4	Water Jeopardy – Bohannan Huston	Water Cycle/General	Rambaldi Sandia Vista (23)	McCann Cielo Azul (27)	Braden Bernalillo (22)
5	The Incredible Water Journey - FS	Water Cycle	Romero Bernalillo (22)	Chavez Bernalillo (22)	Vasquez Sandia Vista (24)
6	Watersheds & Aquifers – UNM	Watersheds	Paquin Bernalillo (23)	Vasquez Sandia Vista (24)	VonOsten Sandia Vista (24)
7	Rolling River – Ciudad SWCD	Watersheds	Santoscoy Bernalillo (23)	Paquin Bernalillo (23)	Lujan Bernalillo (23)
8	Bio Van – City of ABQ	Ecosysems	Infantino, et. al. Cielo Azul (27)	Glauvitz Sandia Vista (23)	Paquin Bernalillo (23)
9	Weather or Not - NOAA	Water Cycle/Weather	Chavez Bernalillo (22)	Allis Cielo Azul (26)	Romero Bernalillo (22)
10	My Water Footprint - OSE	General Water	Braden Bernalillo (22)	Messenger Cielo Azul (25)	Allis Cielo Azul (26)
11	Dirty to Drinkable – CH2M	Water Quality	Lujan Bernalillo (23)	Infantino, et. al. Cielo Azul (27)	Rambaldi Sandia Vista (23)
12	Keep the Rio Grande – Stormwater Team	Watersheds	Vasquez Sandia Vista (24)	Romero Bernalillo (22)	Infantino, et. al. Cielo Azul (27)
13	Leaky Faucet – RRPS	Conservation	McCann Cielo Azul (27)	Rambaldi Sandia Vista (23)	Crunk Cielo Azul (27)
14	Incredible Journey – NMED	Water Cycle	Glauvitz Sandia Vista (23)	Braden Bernalillo (22)	Santoscoy Bernalillo (23)
Hallway	Let's Settle this Outside – CH2M	Wastewater	Mandato Cielo Azul (27)	Santoscoy Bernalillo (23)	McCann Cielo Azul (27)
Outside	Water Energy Nexus - RRPS	General Water	Allis Cielo Azul (26)	Crunk Cielo Azul (27)	Messenger Cielo Azul (25)
	16 Presenters		**16 Classes**		

Appendix A

Festival Presentations

This appendix lists all of the Festival presentations and contacts. For each section, there is the name of the presentation, a brief description of the activity, the correlation of the presentation with the NM State Science and Math Standards and the Common Core Standards, the contact information of the presenter and if available, where the teacher can locate the presentation if they would like to teach it in the classroom.

Please note that the New Mexico Fourth Grade Science Standards are in the format of: Strand. Standard. Benchmark. Performance Standard.

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BioVan

Students rotate through stations where they learn about the plants, mammals, arthropods, and water table along the Bosque and how it is all supported by water in the Rio Grande.

NM State Science Standards, Fourth Grade: 1.1.1, 1.1.2, 1.1.3, 2.2.1, 2.2.2, 3.1.1.1

CCSS

ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

City of Albuquerque

Kary Schumpert (505) 764-6242 kschumpert@cabq.gov

A similar activity found on web: Habitats of the World, Discovery Education

http://www.discoveryeducation.com/teachers/free-lesson-plans/habitats-of-the-world.cfm

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Bosque Wildlife Safari
Students participate in an interactive game utilizing photographs of animals to create discussions about the animal's lifestyle and habitat. Through this activity students are taught about the importance of the food web and the inter-connectedness of all things to their environments. For the Water Festival, water is used as a focal point for these discussions.
NM State Science Standards, Fourth Grade: 1.1.1.2, 2.2.1.1, 2.2.1.2, 2.2.1.3, 2.2.1.4, 2.2.2.1, 2.2.2.2, 2.2.2.3, 3.1.1.1, 3.1.1.4
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

City of Albuquerque, Open Space Division
Bill Pentler (505) 452-5222 wpentler@cabq.gov

A similar activity found on web: Build a Food Web game, Exploring Nature Educational Resources
http://www.exploringnature.org/db/detail.php?dbID=2&detID=2284

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Dirty to Drinkable
Students learn about processes used to clean water in a contemporary water treatment facility through an interactive process. This activity teaches children about the importance of water quality for drinking water.

CH2M
Will Kessler
will.kessler@ch2m.com

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Incredible Journey

During this activity, students become water molecules and move through the water cycle. They learn about the movement and distribution of water – as well as pollution – on the earth.
NM State Science Standards, Fourth Grade: 2.2.1.3, 3.1.1.4
CCSS
Math 4.OA.5
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

NM Environment Department, Surface Water Quality Bureau
Heidi Henderson
heidi.henderson@state.nm.us

A similar activity found on web: Incredible Journey, Project WET
http://files.dnr.state.mn.us/education_safety/education/project_wet/sample_activity.pdf

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The Incredible Water Journey
Students become water molecules and move through the water cycle. They learn about the movement and distribution of water – as well as pollution – on the earth.
NM State Science Standards, Fourth Grade: 2.2.1.3, 3.1.1.4
CCSS
Math 4.OA.5
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

US Fish & Wildlife Service, NM Fish & Wildlife Conservation Office
Angela James (505) 342-9900
angela_james@fws.gov

A similar activity found on web: Incredible Journey, Project WET
http://files.dnr.state.mn.us/education_safety/education/project_wet/sample_activity.pdf

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Keep the Rio Grande
Keep the Rio Grande Activity is an interactive game where the students become an arroyo supplying stormwater to the Rio Grande. The stormwater picks up a variety of items as the flow increases creating a flood or raindrops, trash, pet waste, bacteria, plastics as the students pass the

items down to the river. The students learn about stormwater quality and the impact we have on water in our neighborhoods and town. After the rain has stopped, students discuss the water and debris on the ground around them and at the end of the line the river. Then they are tasked with sorting all of the items to bins labeled: trash, compost, recycle and rain.
NM State Science Standards, Fourth Grade: 2.1.1.1, 3.1.1.1
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

Middle Rio Grande Stormwater Quality Team
Catherine Conran (505) 892-7246 cconran@SSCAFCA.com

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Leaky Faucet

Students create a water leak and scientifically measure the leak. The children then quantify the amount of wasted water over time.
NM State Science Standards, Fourth Grade: 1.1.1.1, 1.1.3.2
CCSS
Math 4.OA.1, 4.OA.2, 4.OA.3
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

Rio Rancho Public Schools
Lou Cusimano (505) 975-0326
lou.cusimano@rrps.net

A similar activity found on web: Leaky Faucet, Utah Education Network
http://www.uen.org/Lessonplan/preview.cgi?LPid=27247

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Let's Settle This Outside
Students become wastewater operators and learn how the wastewater treatment plant cleans dirty water. They then create wastewater using everyday materials and clean the wastewater by sorting it into three stations: water, sludge, and trash.
NM State Science Standards, Fourth Grade: 3.1.1.1, 3.1.1.2, 3.1.1.4
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

CH2M

Billy Jaques	(505) 891-5024	billy.jaquez@ch2m.com
Katya Narvaiz	(505) 891-5017	knarvaiz@rrnm.gov

A similar activity found on web: Wastewater: We Treat it Right, City of Boise
http://bee.cityofboise.org/media/216580/43385_Wastewater.pdf

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My Water Footprint
A Water Footprint represents how a person uses water to meet their needs (direct use) and the water that others such growers, manufacturers, processers use (indirect use) to provide the products we purchase and use every day. The activity teaches the importance of water and introduces /explains the terms direct and indirect water use and challenges students to think of ways to conserve water. The students also create a collage that illustrates their water needs by incorporating both direct and indirect water use as wells as ways to conserve water.

New Mexico Office of the State Engineer, Water Conservation Bureau
Julie Valdez julie.valdez@state.nm.us

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New Mexico Past and Present
Students learn where water comes from (the water cycle), where water is today in New Mexico, and what they can do to protect and conserve water. The students then become detectives to discover where water occurred in the past in New Mexico.
NM State Science Standards, Fourth Grade: 1.1.1.1, 1.1.2.2
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

New Mexico Museum of Natural History and Science
Mike Sanchez (505) 841-2583 michael.sanchez1@state.nm.us

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Rio Grande Bosque Water Cycle
Students become water molecules traveling through a water cycle. In the semi-arid climate of New Mexico, our scarce precipitation limits the quantity of water available for use by plants, animals and humans. The presentation also emphases why we need to consider all water users when making water-use decisions.
NM State Science Standards, Fourth Grade: 4.2.4, 4.2.5, 4.4.5
CCSS
Math 4.OA.5
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

Rio Grande Nature Center
Tanja George (505) 344-7240
Tanja.George@state.nm.us

A similar activity found on web: Incredible Journey, Project WET
http://files.dnr.state.mn.us/education_safety/education/project_wet/sample_activity.pdf

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Rolling River
How does a river work? Students see a model river and watch the effects of water as it flows downstream.
NM State Science Standards, Fourth Grade: 2.2.2.1, 3.1.1.1
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

Ciudad Soil and Water Conservation District
Jennifer Moss ciudadswcd1944@gmail.com

A similar activity found on web: Protecting Our Water Resources, Midwest Research Institute (See Level 2)
http://www.stormwater.ucf.edu/toolkit/vol3/Contents/pdfs/Student%20Activities/student_activities.pdf

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Water Jeopardy

Students learn basic concepts and differences about groundwater vs. surface water supply for potable drinking water. The concepts are reinforced by participation in a Jeopardy game where students compete to determine the correct water "question" for a series of given "answers" (like the TV show).
NM State Science Standards, Fourth Grade: 2.2.2.1, 3.1.1.1
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

Bohannon Huston, Inc.
Nathan Roberts (505) 823-1000
nroberts@bhinc.com

A similar activity found on web: The Water Cycle Jeopardy, Super Teacher Tools (online Flash game for up to 5 teams)

http://www.superteachertools.com/jeopardy/usergames/Jan201205/game1327973751.php

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Watersheds and Stormwater

http://www.stormwater.ucf.edu/toolkit/vol3/Contents/pdfs/Student%20Activities/student_activities.pdf

Students learn about watersheds by examining and manipulating watershed models. They learn that a watershed is the land area that drains to a water body such as a river or lake. They see for themselves how watersheds can influence water quality.
NM State Science Standards, Fourth Grade: 2.1.1.1, 3.1.1.1
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

Sandia National Laboratories
John Kay (505) 344-7240
jtkay@sandia.gov

A similar activity found on web: Protecting Our Water Resources, Midwest Research Institute (See Level 2)

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Watersheds and Aquifers

Students learn about watersheds by examining and manipulating both types of models. They learn that a watershed is the land area that drains to a water body such as a river or lake. The students also learn how drinking water comes from aquifers and how pollution can influence water quality.
NM State Science Standards, Fourth Grade: 2.1.1.1, 3.1.1.1
CCSS
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

University of New Mexico, Civil Engineering
Zach Stoll zstoll@unm.edu

A similar activity found on web: Protecting Our Water Resources, Midwest Research Institute (See Level 2)
http://www.stormwater.ucf.edu/toolkit/vol3/Contents/pdfs/Student%20Activities/student_activities.pdf

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Weather or Not
Students analyze meteorological and hydrological data to determine if a flash flood might occur, issue warnings, and monitor the flood event.
NM State Science Standards, Fourth Grade: 1.1.1, 2.1.1, 2.1.2, 2.3.2.3
CCSS
Math 4.OA.1, 4.OA.2, 4.OA.3
ELA 4.SL.1, 4.SL.3, 4.L.4, 4.L.6

National Oceanic & Atmospheric Administration, National Weather Service
Kerry Jones (505) 243-0702 kerry.jones@noaa.gov

A similar activity found on web: Create Your Own Water Cycle, The Water Project
http://thewaterproject.org/resources/lesson-plans/create-a-mini-water-cycle.php

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Water/Energy Nexus

Rio Rancho Public Schools
Elena Kayak elena.kayak@rrps.net

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Appendix C

The City of Rio Rancho developed a student test for every student participant to complete both before and after the Festival.

Pre and Post Test

Children's Water Festival in Rio Rancho
2016 Student Test Questions

1. What makes the river water dirty?
   a) Trash
   b) Dog poop
   c) Leaky cars
   d) All the above

2. Why is water so important to life?
   a) People need it to survive
   b) Plants need it to survive
   c) The river needs it to support nature
   d) All the above

3. What is the water cycle?
   a) Precipitation, Evaporation, Cooling
   b) Pumping, Treatment, Delivery
   c) Evaporation, Condensation, Precipitation
   d) River, stream, aquifer

4. What is a watershed?
   a) The water in a river or lake
   b) Water used to clean garages and sheds
   c) The land area where all water drains to a river, basin or sea
   d) A mountain lake

5. Where does the water from my faucet come from?
   a) River
   b) Aquifer or groundwater
   c) Ocean
   d) None of the above

6. Who are the other water users in our state?
    a) People, Plants, Animals
    b) Farmers, Industry, Schools
    c) Parents, Teachers, Friends
    d) All the above

7. How can I protect our water?
    a) Don’t litter
    b) Conserve water at home
    c) Tell my friends to protect our rivers and streams
    d) All the above

8. Where does my wastewater (sewer water) go?
    a) Straight to the river
    b) Treatment plant to be cleaned then to the river
    c) Out to a field
    d) Back to my house

Appendix D

Statistical Outcomes from Students' Tests by School, Teacher, and Question

The following table shows the percentage of students that got the question correct on both the pre and post-test. The improvement is shown by the increase/decrease in percentage points. Not every teacher from every school provided pre and post-tests. ***There was a 14 percentage point increase from pre- to post-tests for all the participating students.***

Table 1 shows the increase/decrease by question for the entire testing group.
Table 2 shows the test increase/decrease average by school and teacher.
Table 3 shows pre- and post-test by each teacher (school) for each question.

Table 1 **Test Question**	**Increase from Pre to Post-Test**
1 Makes river dirty	22%
2 H2O importance to life	16%
3 Water Cycle	13%
4 Watershed	7%
5 DW come from	19%
6 Water users	6%
7 protect water	15%
8 Where Wastewater go	11%

Table 2 **School**	**Average %**	**Average % by School**
Bernalillo (BES)		
Braden	29%	
Lujan	1%	
Paquin	14%	
Romero	12%	
Santoscoy	22%	
		16%
Cielo Azul (CA)		
Allis	34%	
Crunk	16%	
Infantino/Osmunson	1%	
Mandato	11%	

McCann	15%	
Messenger	9%	
		14%
Colinas del Norte (CDN)		
Griffin	6%	
Randall	19%	
Welch	2%	
Wiberg	12%	
Vargas	-1%	
		8%
Enchanted Hills (EH)		
Haack	17%	
Hunt	9%	
Mandish	12%	
March	8%	
Wiebelhaus	-1%	
		9%
Ernest Stapleton (ES)		
Lowe	11%	
Marcotte	1%	
Reibach	5%	
Rojas	14%	
Zuniga	25%	
		11%

Maggie Cordova (MC)		
Alderson	23%	
Hanosh	7%	
Stiener	19%	
Zirpel	2%	
		12%
Martin Luther King (MLK)		
Dengler	15%	
Filkins	12%	
Pearson	5%	
Ruybal	7%	
Salaz	11%	
		10%
Puesta del Sol (PDS)		
Armendariz	15%	
Herrera	8%	
Learn	28%	
Longbottom	14%	
Miller	2%	
Straley	18%	
		14%
Rio Rancho (RR)		
Gilbert	11%	
Menor	21%	
Paiz	12%	
		15%
Sandia Vista (SV)		
Glauvitz	26%	
Vasquez	21%	
Von Osten	46%	
		31%
St. Thomas (ST)		
Herrera	13%	
Lawton	9%	
		11%
Vista Grande (VG)		
Kauffman	29%	
Lockhart	8%	
Mondragon	18%	
Ramos	13%	
		17%

Table 1 **Teacher (School) Question#**			
Braden (BES)	Pre %	Post %	Improvement
1 Makes river dirty	35%	50%	15%
2 H2O importance to life	55%	88%	33%
3 Water Cycle	15%	56%	41%
4 Watershed	40%	69%	29%
5 DW come from	35%	75%	40%
6 Water users	75%	88%	13%
7 protect water	50%	88%	38%
8 Where Wastewater go	60%	81%	21%
Average %	46%	74%	
	Average increase =		29%
Lujan (BES)	Pre %	Post %	Improvement
1 Makes river dirty	53%	76%	23%
2 H2O importance to life	65%	76%	11%
3 Water Cycle	41%	48%	6%
4 Watershed	41%	52%	11%
5 DW come from	35%	33%	-2%
6 Water users	71%	52%	-18%
7 protect water	59%	62%	3%
8 Where Wastewater go	53%	24%	-29%
Average %	52%	53%	
	Average increase =		1%

Paquin (BES)	Pre %	Post %	Improvement
1 Makes river dirty	20%	65%	45%
2 H2O importance to life	40%	50%	10%
3 Water Cycle	45%	80%	35%
4 Watershed	60%	75%	15%
5 DW come from	35%	80%	45%
6 Water users	65%	30%	-35%
7 protect water	30%	45%	15%
8 Where Wastewater go	50%	30%	-20%
Average %	43%	57%	
	Average increase =		14%

Romero (BES)	Pre %	Post %	Improvement
1 Makes river dirty	41%	70%	29%
2 H2O importance to life	53%	65%	12%
3 Water Cycle	12%	45%	33%
4 Watershed	71%	50%	-21%
5 DW come from	24%	30%	6%
6 Water users	53%	65%	12%
7 protect water	53%	60%	7%
8 Where Wastewater go	35%	55%	20%
Average %	43%	55%	
	Average increase =		12%

Santoscoy (BES)	Pre %	Post %	Improvement
1 Makes river dirty	52%	89%	37%
2 H2O importance to life	76%	84%	8%
3 Water Cycle	19%	58%	39%
4 Watershed	57%	68%	11%
5 DW come from	33%	89%	56%
6 Water users	76%	79%	3%
7 protect water	62%	74%	12%
8 Where Wastewater go	67%	79%	12%
Average %	55%	78%	
	Average increase =		22%

Allis (CA)	Pre %	Post %	Improvement
1 Makes river dirty	72%	100%	28%
2 H2O importance to life	60%	100%	40%
3 Water Cycle	24%	100%	76%
4 Watershed	56%	38%	-18%
5 DW come from	32%	90%	58%
6 Water users	52%	86%	34%
7 protect water	60%	86%	26%
8 Where Wastewater go	56%	81%	25%
Average %	52%	85%	
	Average increase =		34%

Crunk (CA)	Pre %	Post %	Improvement
1 Makes river dirty	92%	100%	8%
2 H2O importance to life	77%	85%	8%
3 Water Cycle	62%	81%	19%
4 Watershed	58%	69%	12%
5 DW come from	58%	88%	31%
6 Water users	85%	88%	4%
7 protect water	62%	92%	31%
8 Where Wastewater go	69%	85%	15%
Average %	70%	86%	
	Average increase =		16%

Infantino/Osmunson (CA)	Pre %	Post %	Improvement
1 Makes river dirty	56%	64%	8%
2 H2O importance to life	48%	68%	20%
3 Water Cycle	48%	40%	-8%
4 Watershed	56%	32%	-24%
5 DW come from	26%	20%	-6%
6 Water users	41%	52%	11%
7 protect water	37%	44%	7%
8 Where Wastewater go	41%	40%	-1%
Average %	44%	45%	
	Average increase =		1%

Mandato (CA)	Pre %	Post %	Improvement
1 Makes river dirty	44%	62%	17%
2 H2O importance to life	56%	73%	18%
3 Water Cycle	52%	42%	-10%
4 Watershed	48%	35%	-14%
5 DW come from	37%	65%	28%
6 Water users	63%	62%	-1%
7 protect water	52%	69%	17%
8 Where Wastewater go	41%	73%	32%
Average %	49%	60%	
	Average increase =		11%

McCann (CA)	Pre %	Post %	Improvement
1 Makes river dirty	52%	54%	2%
2 H2O importance to life	68%	71%	3%
3 Water Cycle	36%	38%	2%
4 Watershed	64%	71%	7%
5 DW come from	28%	75%	47%
6 Water users	44%	50%	6%
7 protect water	32%	46%	14%
8 Where Wastewater go	28%	71%	43%
Average %	44%	59%	
	Average increase =		15%

Messenger (CA)	Pre %	Post %	Improvement
1 Makes river dirty	60%	67%	7%
2 H2O importance to life	52%	83%	31%
3 Water Cycle	76%	67%	-9%
4 Watershed	72%	71%	-1%
5 DW come from	16%	21%	5%
6 Water users	64%	100%	36%
7 protect water	52%	50%	-2%
8 Where Wastewater go	56%	58%	2%
Average %	56%	65%	
	Average increase =		9%

Griffin (CDN)	Pre %	Post %	Improvement
1 Makes river dirty	71%	76%	5%
2 H2O importance to life	75%	71%	-4%
3 Water Cycle	32%	48%	15%
4 Watershed	36%	48%	12%
5 DW come from	75%	62%	-13%
6 Water users	68%	62%	-6%
7 protect water	43%	71%	29%
8 Where Wastewater go	54%	67%	13%
Average %	57%	63%	
	Average increase =		6%

Randall (CDN)	Pre %	Post %	Improvement
1 Makes river dirty	30%	72%	42%
2 H2O importance to life	30%	78%	48%
3 Water Cycle	70%	61%	-9%
4 Watershed	40%	44%	4%
5 DW come from	60%	78%	18%
6 Water users	60%	83%	23%
7 protect water	40%	67%	27%
8 Where Wastewater go	70%	67%	-3%
Average %	50%	69%	
	Average increase =		19%

Welch (CDN)	Pre %	Post %	Improvement
1 Makes river dirty	33%	37%	4%
2 H2O importance to life	20%	33%	13%
3 Water Cycle	27%	15%	-12%
4 Watershed	40%	41%	1%
5 DW come from	60%	48%	-12%
6 Water users	47%	41%	-6%
7 protect water	40%	41%	1%
8 Where Wastewater go	33%	59%	26%
Average %	38%	39%	
	Average increase =		2%

Wiberg (CDN)	Pre %	Post %	Improvement
1 Makes river dirty	47%	64%	16%
2 H2O importance to life	32%	82%	50%
3 Water Cycle	42%	41%	-1%
4 Watershed	53%	59%	6%
5 DW come from	37%	50%	13%
6 Water users	63%	73%	10%
7 protect water	26%	50%	24%
8 Where Wastewater go	47%	27%	-20%
Average %	43%	56%	
	Average increase =		12%

Vargas (CDN)	Pre %	Post %	Improvement
1 Makes river dirty	50%	58%	8%
2 H2O importance to life	60%	71%	11%
3 Water Cycle	30%	33%	3%
4 Watershed	60%	42%	-18%
5 DW come from	35%	25%	-10%
6 Water users	70%	67%	-3%
7 protect water	65%	58%	-7%
8 Where Wastewater go	25%	33%	8%
Average %	49%	48%	
	Average increase =		-1%

Haack (EH)	Pre %	Post %	Improvement
1 Makes river dirty	71%	86%	14%
2 H2O importance to life	76%	81%	5%
3 Water Cycle	24%	67%	43%
4 Watershed	48%	48%	0%
5 DW come from	33%	81%	48%
6 Water users	71%	67%	-5%
7 protect water	52%	62%	10%
8 Where Wastewater go	52%	76%	24%
Average %	54%	71%	
	Average increase =		17%

Hunt (EH)	Pre %	Post %	Improvement
1 Makes river dirty	67%	64%	-3%
2 H2O importance to life	83%	77%	-6%
3 Water Cycle	28%	36%	9%
4 Watershed	33%	55%	21%
5 DW come from	33%	45%	12%
6 Water users	67%	64%	-3%
7 protect water	67%	73%	6%
8 Where Wastewater go	44%	82%	37%
Average %	53%	62%	
	Average increase =		9%

Mandich (EH)	Pre %	Post %	Improvement
1 Makes river dirty	56%	61%	5%
2 H2O importance to life	50%	52%	2%
3 Water Cycle	50%	43%	-7%
4 Watershed	39%	43%	5%
5 DW come from	39%	48%	9%
6 Water users	33%	48%	14%
7 protect water	33%	61%	28%
8 Where Wastewater go	28%	70%	42%
Average %	41%	53%	
	Average increase =		12%

Marsh (EH)	Pre %	Post %	Improvement
1 Makes river dirty	39%	77%	38%
2 H2O importance to life	78%	86%	9%
3 Water Cycle	44%	73%	28%
4 Watershed	61%	27%	-34%
5 DW come from	39%	41%	2%
6 Water users	72%	77%	5%
7 protect water	72%	77%	5%
8 Where Wastewater go	44%	55%	10%
Average %	56%	64%	
	Average increase =		8%

Wiebelhaus (EH)	Pre %	Post %	Improvement
1 Makes river dirty	73%	86%	13%
2 H2O importance to life	82%	86%	4%
3 Water Cycle	45%	71%	26%
4 Watershed	73%	62%	-11%
5 DW come from	50%	57%	7%
6 Water users	95%	81%	-15%
7 protect water	91%	86%	-5%
8 Where Wastewater go	86%	62%	-24%
Average %	74%	74%	
	Average increase =		-1%

Lowe (ES)	Pre %	Post %	Improvement
1 Makes river dirty	29%	76%	47%
2 H2O importance to life	58%	83%	24%
3 Water Cycle	96%	97%	1%
4 Watershed	42%	59%	17%
5 DW come from	50%	55%	5%
6 Water users	63%	59%	-4%
7 protect water	50%	52%	2%
8 Where Wastewater go	42%	38%	-4%
Average %	54%	65%	
	Average increase =		11%

Marcotte (ES)	Pre %	Post %	Improvement
1 Makes river dirty	43%	78%	34%
2 H2O importance to life	78%	70%	-8%
3 Water Cycle	100%	96%	-4%
4 Watershed	26%	63%	37%
5 DW come from	35%	41%	6%
6 Water users	78%	74%	-4%
7 protect water	57%	63%	6%
8 Where Wastewater go	65%	74%	9%
Average %	60%	70%	
	Average increase =		10%

Reibach (ES)	Pre %	Post %	Improvement
1 Makes river dirty	90%	90%	0%
2 H2O importance to life	86%	97%	10%
3 Water Cycle	90%	93%	3%
4 Watershed	34%	59%	24%
5 DW come from	62%	59%	-3%
6 Water users	79%	83%	3%
7 protect water	90%	83%	-7%
8 Where Wastewater go	45%	52%	7%
Average %	72%	77%	
	Average increase =		5%

Rojas (ES)	Pre %	Post %	Improvement
1 Makes river dirty	44%	64%	20%
2 H2O importance to life	56%	60%	4%
3 Water Cycle	92%	100%	8%
4 Watershed	20%	48%	28%
5 DW come from	40%	56%	16%
6 Water users	60%	60%	0%
7 protect water	44%	56%	12%
8 Where Wastewater go	44%	64%	20%
Average %	50%	64%	
	Average increase =		14%

Zuniga (ES)	Pre %	Post %	Improvement
1 Makes river dirty	39%	72%	33%
2 H2O importance to life	43%	55%	12%
3 Water Cycle	43%	83%	40%
4 Watershed	43%	59%	16%
5 DW come from	29%	48%	20%
6 Water users	43%	66%	23%
7 protect water	39%	66%	26%
8 Where Wastewater go	29%	55%	27%
Average %	38%	63%	
	Average increase =		25%

Alderson (MC)	Pre %	Post %	Improvement
1 Makes river dirty	58%	92%	35%
2 H2O importance to life	62%	85%	23%
3 Water Cycle	50%	54%	4%
4 Watershed	65%	54%	-12%
5 DW come from	31%	81%	50%
6 Water users	62%	73%	12%
7 protect water	42%	81%	38%
8 Where Wastewater go	50%	81%	31%
Average %	52%	75%	
	Average increase =		23%

Hanosh (MC)	Pre %	Post %	Improvement
1 Makes river dirty	59%	77%	18%
2 H2O importance to life	64%	77%	14%
3 Water Cycle	45%	36%	-9%
4 Watershed	36%	27%	-9%
5 DW come from	27%	32%	5%
6 Water users	45%	73%	27%
7 protect water	50%	59%	9%
8 Where Wastewater go	27%	27%	0%
Average %	44%	51%	
	Average increase =		7%

Steiner (MC)	Pre %	Post %	Improvement
1 Makes river dirty	35%	92%	58%
2 H2O importance to life	70%	88%	19%
3 Water Cycle	74%	88%	15%
4 Watershed	65%	92%	27%
5 DW come from	35%	38%	4%
6 Water users	70%	77%	7%
7 protect water	48%	73%	25%
8 Where Wastewater go	39%	35%	-5%
Average %	54%	73%	
	Average increase =		19%

Zirpel (MC)	Pre %	Post %	Improvement
1 Makes river dirty	64%	54%	-10%
2 H2O importance to life	52%	63%	11%
3 Water Cycle	64%	71%	7%
4 Watershed	56%	42%	-14%
5 DW come from	28%	29%	1%
6 Water users	60%	54%	-6%
7 protect water	52%	67%	15%
8 Where Wastewater go	28%	38%	10%
Average %	51%	52%	
	Average increase =		2%

Dengler (MLK)	Pre %	Post %	Improvement
1 Makes river dirty	53%	80%	27%
2 H2O importance to life	42%	75%	33%
3 Water Cycle	84%	95%	11%
4 Watershed	63%	85%	22%
5 DW come from	58%	65%	7%
6 Water users	63%	70%	7%
7 protect water	63%	75%	12%
8 Where Wastewater go	68%	70%	2%
Average %	62%	77%	
	Average increase =		15%

Filkins (MLK)	Pre %	Post %	Improvement
1 Makes river dirty	35%	77%	42%
2 H2O importance to life	57%	68%	12%
3 Water Cycle	83%	86%	4%
4 Watershed	48%	68%	20%
5 DW come from	52%	86%	34%
6 Water users	70%	64%	-6%
7 protect water	61%	55%	-6%
8 Where Wastewater go	48%	41%	-7%
Average %	57%	68%	
	Average increase =		12%

Pearson (MLK)	Pre %	Post %	Improvement
1 Makes river dirty	64%	63%	-2%
2 H2O importance to life	68%	83%	15%
3 Water Cycle	84%	75%	-9%
4 Watershed	64%	58%	-6%
5 DW come from	84%	79%	-5%
6 Water users	60%	75%	15%
7 protect water	44%	67%	23%
8 Where Wastewater go	64%	75%	11%
Average %	67%	72%	
	Average increase =		5%

Ruybal (MLK)	Pre %	Post %	Improvement
1 Makes river dirty	64%	50%	-14%
2 H2O importance to life	77%	83%	6%
3 Water Cycle	50%	67%	17%
4 Watershed	59%	61%	2%
5 DW come from	45%	83%	38%
6 Water users	77%	78%	1%
7 protect water	64%	72%	9%
8 Where Wastewater go	73%	67%	-6%
Average %	64%	70%	
	Average increase =		7%

Salaz (MLK)	Pre %	Post %	Improvement
1 Makes river dirty	65%	86%	20%
2 H2O importance to life	83%	86%	3%
3 Water Cycle	48%	62%	14%
4 Watershed	61%	67%	6%
5 DW come from	30%	52%	22%
6 Water users	78%	81%	3%
7 protect water	61%	71%	11%
8 Where Wastewater go	30%	43%	12%
Average %	57%	68%	
	Average increase =		11%

Armendariz (PDS)	Pre %	Post %	Improvement
1 Makes river dirty	39%	95%	56%
2 H2O important to life	91%	100%	9%
3 Water Cycle	78%	86%	7%
4 Watershed	74%	71%	-2%
5 DW come from	52%	57%	5%
6 Water users	91%	90%	-1%
7 protect water	57%	81%	24%
8 Where Wastewater go	48%	67%	19%
Average %	66%	81%	
	Average increase =		15%

Herrera (PDS)	Pre %	Post %	Improvement
1 Makes river dirty	50%	82%	32%
2 H2O importance to life	56%	86%	31%
3 Water Cycle	78%	50%	-28%
4 Watershed	61%	32%	-29%
5 DW come from	61%	68%	7%
6 Water users	56%	82%	26%
7 protect water	39%	68%	29%
8 Where Wastewater go	56%	55%	-1%
Average %	57%	65%	
	Average increase =		8%

Learn (PDS)	Pre %	Post %	Improvement
1 Makes river dirty	39%	78%	39%
2 H2O importance to life	43%	87%	43%
3 Water Cycle	57%	52%	-4%
4 Watershed	52%	30%	-22%
5 DW come from	17%	65%	48%
6 Water users	26%	83%	57%
7 protect water	39%	70%	30%
8 Where Wastewater go	17%	52%	35%
Average %	36%	65%	
	Average increase =		28%

Longbottom (PDS)	Pre %	Post %	Improvement
1 Makes river dirty	74%	73%	0%
2 H2O importance to life	68%	87%	18%
3 Water Cycle	42%	67%	25%
4 Watershed	42%	47%	5%
5 DW come from	32%	47%	15%
6 Water users	58%	67%	9%
7 protect water	58%	67%	9%
8 Where Wastewater go	37%	67%	30%
Average %	51%	65%	
	Average increase =		14%

Miller (PDS)	Pre %	Post %	Improvement
1 Makes river dirty	60%	47%	-13%
2 H2O importance to life	67%	80%	13%
3 Water Cycle	20%	60%	40%
4 Watershed	53%	53%	0%
5 DW come from	20%	33%	13%
6 Water users	80%	67%	-13%
7 protect water	67%	60%	-7%
8 Where Wastewater go	53%	33%	-20%
Average %	53%	54%	
	Average increase =		2%

Straley (PDS)	Pre %	Post %	Improvement
1 Makes river dirty	58%	84%	26%
2 H2O importance to life	74%	89%	16%
3 Water Cycle	84%	84%	0%
4 Watershed	53%	63%	11%
5 DW come from	42%	74%	32%
6 Water users	84%	89%	5%
7 protect water	63%	84%	21%
8 Where Wastewater go	53%	84%	32%
Average %	64%	82%	
	Average increase =		18%

Gilbert (RR)	Pre %	Post %	Improvement
1 Makes river dirty	58%	81%	24%
2 H2O importance to life	62%	78%	16%
3 Water Cycle	35%	56%	21%
4 Watershed	65%	48%	-17%
5 DW come from	38%	70%	32%
6 Water users	81%	78%	-3%
7 protect water	65%	70%	5%
8 Where Wastewater go	58%	67%	9%
Average %	58%	69%	
	Average increase =		11%

Menor (RR)	Pre %	Post %	Improvement
1 Makes river dirty	46%	93%	47%
2 H2O importance to life	71%	86%	15%
3 Water Cycle	68%	83%	15%
4 Watershed	50%	79%	29%
5 DW come from	21%	55%	34%
6 Water users	61%	79%	19%
7 protect water	64%	79%	15%
8 Where Wastewater go	46%	45%	-2%
Average %	54%	75%	
	Average increase =		21%

Paiz (RR)	Pre %	Post %	Improvement
1 Makes river dirty	75%	65%	-10%
2 H2O importance to life	75%	81%	6%
3 Water Cycle	58%	77%	19%
4 Watershed	33%	62%	28%
5 DW come from	25%	58%	33%
6 Water users	67%	58%	-9%
7 protect water	54%	73%	19%
8 Where Wastewater go	54%	62%	7%
Average %	55%	67%	
	Average increase =		12%

Glauvitz (SV)	Pre %	Post %	Improvement
1 Makes river dirty	68%	100%	32%
2 H2O importance to life	89%	100%	11%
3 Water Cycle	58%	89%	32%
4 Watershed	58%	100%	42%
5 DW come from	53%	84%	32%
6 Water users	95%	89%	-5%
7 protect water	68%	100%	32%
8 Where Wastewater go	58%	95%	37%
Average %	68%	95%	
	Average increase =		26%

Vasquez (SV)	Pre %	Post %	Improvement
1 Makes river dirty	59%	90%	31%
2 H2O importance to life	77%	81%	4%
3 Water Cycle	18%	81%	63%
4 Watershed	50%	62%	12%
5 DW come from	32%	52%	21%
6 Water users	64%	76%	13%
7 protect water	64%	76%	13%
8 Where Wastewater go	41%	52%	11%
Average %	51%	71%	
	Average increase =		21%

Von Osten (SV)	Pre %	Post %	Improvement
1 Makes river dirty	60%	100%	40%
2 H2O importance to life	45%	100%	55%
3 Water Cycle	50%	91%	41%
4 Watershed	55%	96%	41%
5 DW come from	60%	96%	36%
6 Water users	55%	100%	45%
7 protect water	55%	100%	45%
8 Where Wastewater go	30%	96%	66%
Average %	51%	97%	
	Average increase =		46%

Herrera (ST)	Pre %	Post %	Improvement
1 Makes river dirty	27%	65%	38%
2 H2O importance to life	73%	77%	4%
3 Water Cycle	77%	81%	4%
4 Watershed	65%	81%	15%
5 DW come from	54%	92%	38%
6 Water users	62%	50%	-12%
7 protect water	50%	58%	8%
8 Where Wastewater go	69%	77%	8%
Average %	60%	73%	
	Average increase =		13%

Lawton (ST)	Pre %	Post %	Improvement
1 Makes river dirty	44%	80%	36%
2 H2O importance to life	60%	80%	20%
3 Water Cycle	88%	68%	-20%
4 Watershed	76%	92%	16%
5 DW come from	68%	76%	8%
6 Water users	68%	80%	12%
7 protect water	44%	68%	24%
8 Where Wastewater go	68%	40%	-28%
Average %	65%	73%	
	Average increase =		9%

Lockhart (VG)	Pre %	Post %	Improvement
1 Makes river dirty	60%	91%	31%
2 H2O importance to life	72%	100%	28%
3 Water Cycle	52%	86%	34%
4 Watershed	36%	77%	41%
5 DW come from	28%	73%	45%
6 Water users	40%	55%	15%
7 protect water	44%	64%	20%
8 Where Wastewater go	44%	59%	15%
Average %	47%	76%	
	Average increase =		29%

Kauffman (VG)	Pre %	Post %	Improvement
1 Makes river dirty	50%	67%	17%
2 H2O importance to life	58%	81%	23%
3 Water Cycle	50%	33%	-17%
4 Watershed	46%	43%	-3%
5 DW come from	31%	48%	17%
6 Water users	65%	71%	6%
7 protect water	58%	76%	18%
8 Where Wastewater go	38%	43%	4%
Average %	50%	58%	
	Average increase =		8%

Mondragon (VG)	Pre %	Post %	Improvement
1 Makes river dirty	45%	76%	31%
2 H2O importance to life	60%	86%	26%
3 Water Cycle	50%	71%	21%
4 Watershed	60%	71%	11%
5 DW come from	50%	76%	26%
6 Water users	90%	71%	-19%
7 protect water	45%	81%	36%
8 Where Wastewater go	55%	67%	12%
Average %	57%	75%	
	Average increase =		18%

Ramos (VG)	Pre %	Post %	Improvement
1 Makes river dirty	64%	85%	21%
2 H2O importance to life	80%	85%	5%
3 Water Cycle	28%	52%	24%
4 Watershed	24%	41%	17%
5 DW come from	28%	22%	-6%
6 Water users	72%	85%	13%
7 protect water	64%	78%	14%
8 Where Wastewater go	32%	44%	12%
Average %	49%	62%	
	Average increase =		13%