

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com



Long-Term Partnerships Provide One-of-a-Kind Water Education Programs for Tucson Youth

Watersmart Innovations 2014
October 9, 2014

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Kerry Schwartz – Arizona Project WET



Water Education for Kids - History

- Began in the 1970s
- Beat the Peak
- Pete the Beak mascot

Goal

- Promote long-term environmental commitment and active behavioral change
- National leader in both conservation and youth education



water.tucsonaz.gov/water/conservation

Environmental Education Exchange (EEEX)

- FY 13/14 more than 13,000 students in grades one through eight in school districts throughout the Tucson basin had presentations in the classroom.
- Students experience hands-on activities specifically designed for three different grade levels 1st - 3rd grade, 4th and 5th grades and middle school.



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EEEX Programs

- Da Drops
- Our Water, Our Future
- El Tour de Agua
- Tucson Toolkit



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Arizona Project WET



In 2006, an intergovernmental agreement between Tucson Water and the UA Water Resources Research Center was established.

- FY13/14 almost 35,000 students participated
- School Water Audit Program (SWAP)
- Tucson STEM Academy

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Results

- A growing number of students reached each school year
- Nearly 48,000 students FY13/14
- Continually evaluating and updating the lessons
- More input from the school districts
- Fulfills teacher's needs both in and out of the classroom

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Tucson Water Education Program

Professional Development
* 354 Teachers



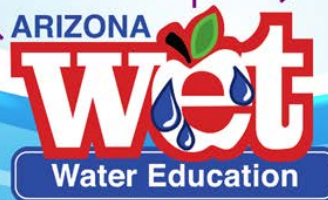
Instruction
* 2,172 Facehours



Student-Driven
Projected Water Savings
* 1,480,071 Gallons/Year



Instructional Impact
* 16,606 students



Direct Instruction
* 18,070 Students
* 439 Teachers



Public Outreach
* 4,463 Adults



<http://arizonawet.arizona.edu>

<http://water.tucsonaz.gov/water/conservation>

Teacher Academies



Teacher Academies offer multi-day professional development that evolves teachers' instructional practice and water-related content mastery through:

- STEM integration
- Interdisciplinary standards inclusion
- Project based learning
- Real-world and relevant application
- Collaborative work with teachers

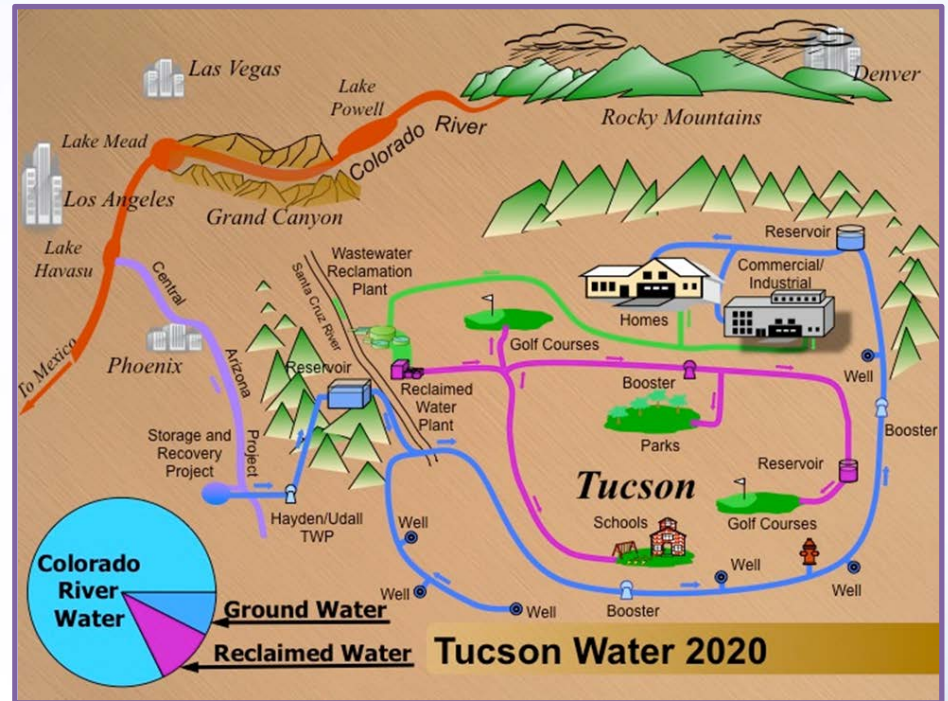
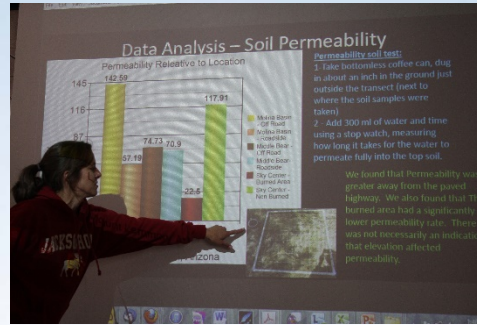


arizonawet.arizona.edu/programs/teacher_academies

Tucson STEM Academy

Teachers explore Tucson Water's Reliability Mission:

- Water Supply
- Water Reclamation & Distribution
- Operations & Systems
- Water Quality
- Water Conservation & Efficiency
- Teacher Workshops & Academies



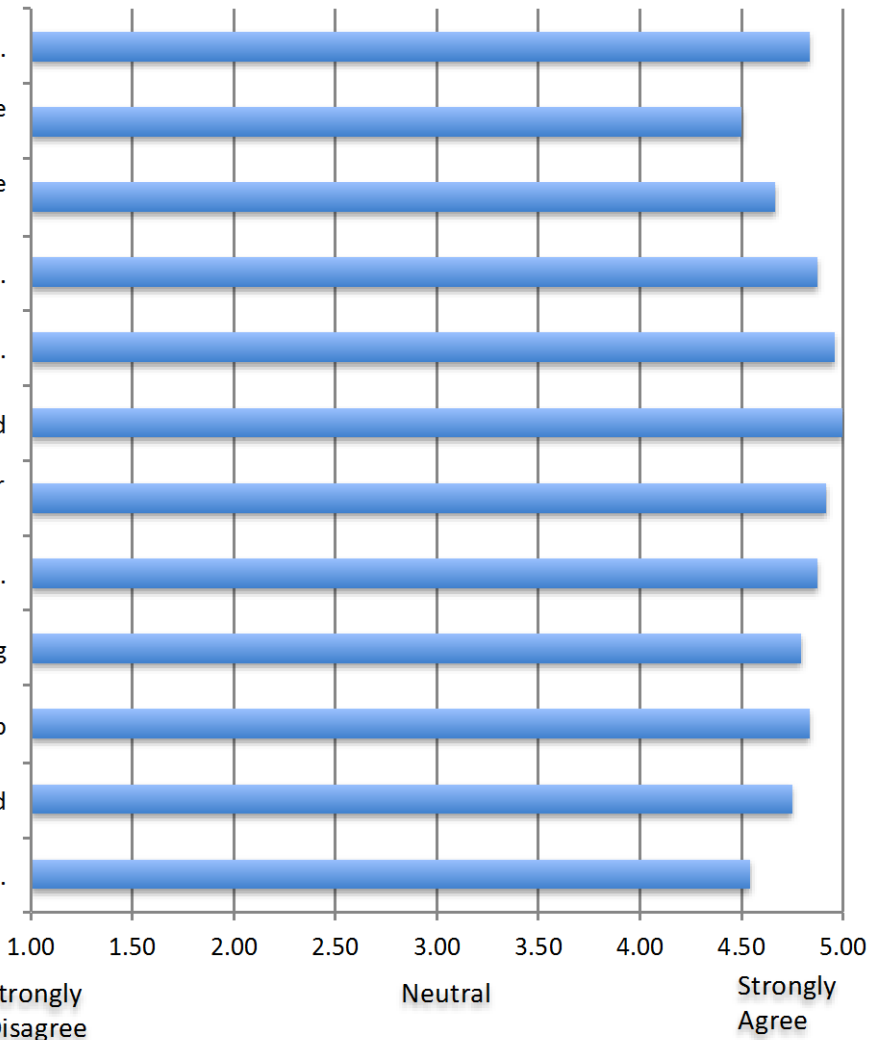
arizonawet.arizona.edu/programs/teacher_academies

5-day
Academy
Reached 48
Teachers so
far!

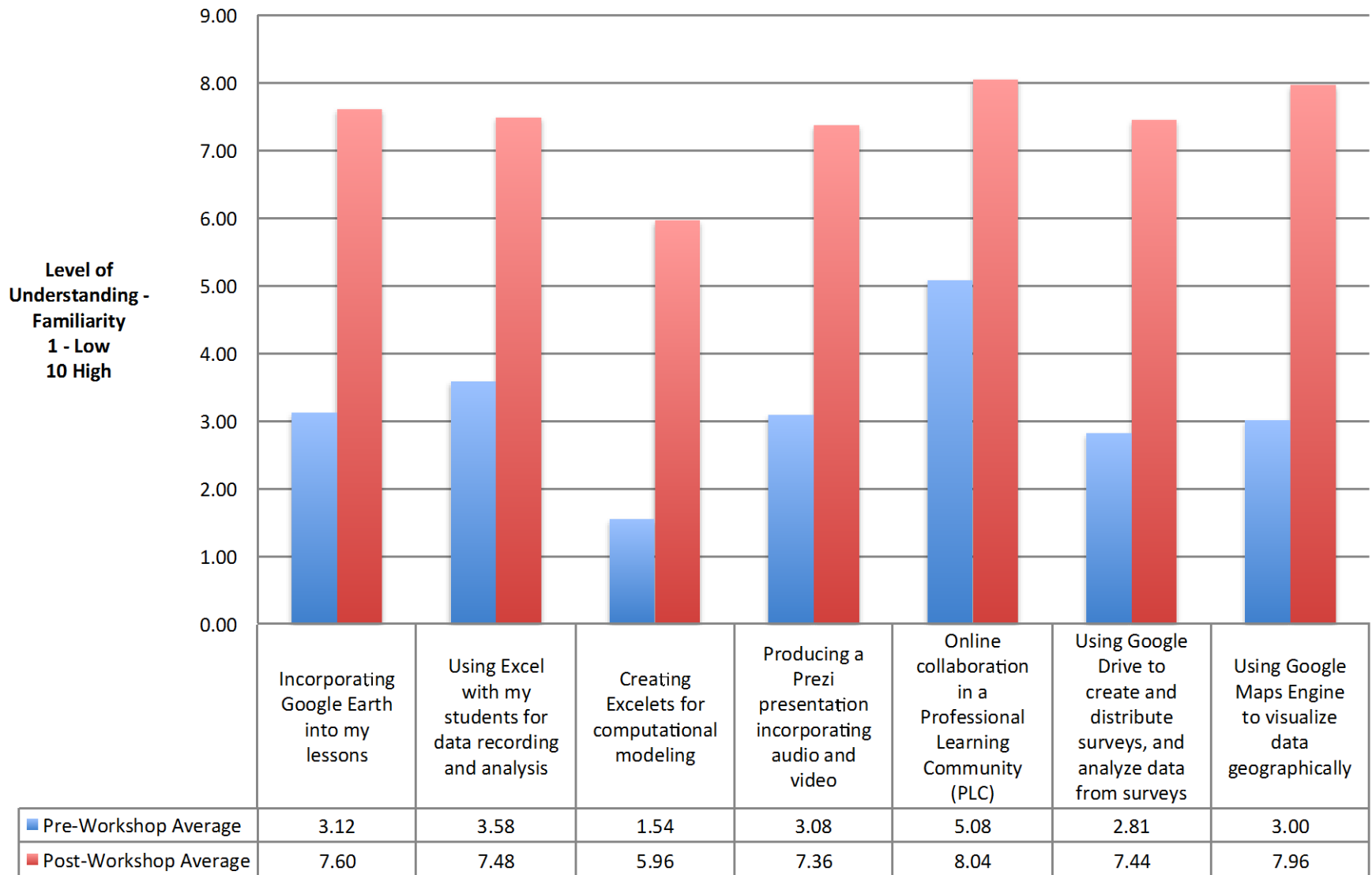
Overall Workshop Presentation Tucson STEM Academy 2014

Statement

- The workshop met my expectations and had an impact on me.
- The facilities and amenities (setting, breaks, etc.) were / suitable for the purposes of the workshop.
- The information, strategies and instructional methods presented during the workshop were helpful to me.
- The workshop was well organized.
- The facilitators were enthusiastic and pleasant.
- The facilitators were well prepared
- The resource materials provided will be helpful for teaching about water and the environment.
- The workshop activities were relevant and improved my knowledge.
- The materials can be adapted to fit in with what I'm teaching
- I intend to become a better water steward as a result of this workshop
- The objectives of the workshop were stated and fulfilled
- This workshop was excellent one of the best I have ever attended.

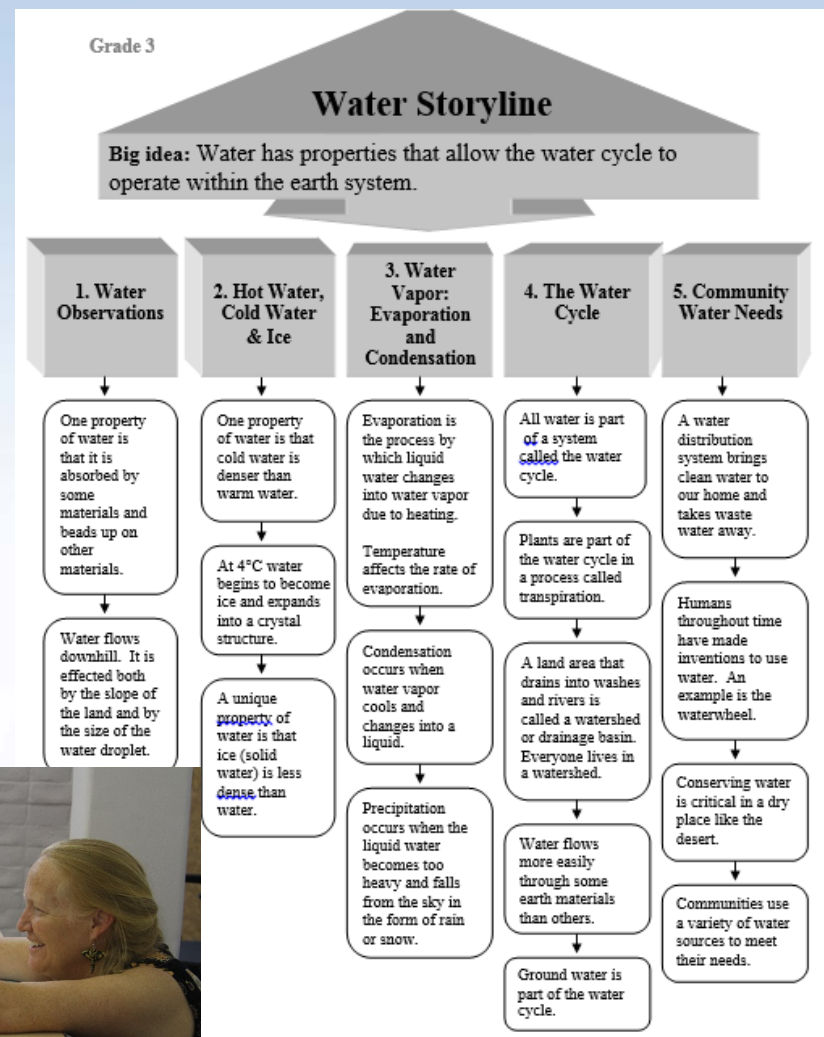


Technology Questions Tucson STEM Academy 2014



A Decade Ago

- Needs assessment
- Curriculum integration
- Student-based interventions as part of the curriculum
- Teacher professional development that models unit instruction



One third of the science taught at the 3rd and 6th grade level is now the Units created & supported by the APW/Tucson Water/Area School District Partnership!

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Tucson Water Education Program

Professional Development
* 354 Teachers



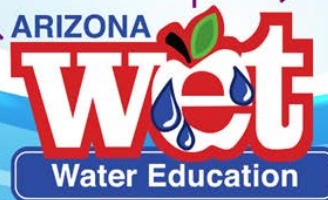
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An Amazing Community Resource

Sweetwater Wetlands



water.tucsonaz.gov/water/conservation

Sweetwater Wetlands Festival

Reached 28,437
students since 2007!

- The Sweetwater Wetland Water Festival is an event designed to synthesize students' conceptual understanding of the Water Unit.
- The Sweetwater Festival is written in as part of the 3rd grade curriculum.



water.tucsonaz.gov/water/conservation

Students Engage in Learning

that is supported by pre and post lessons

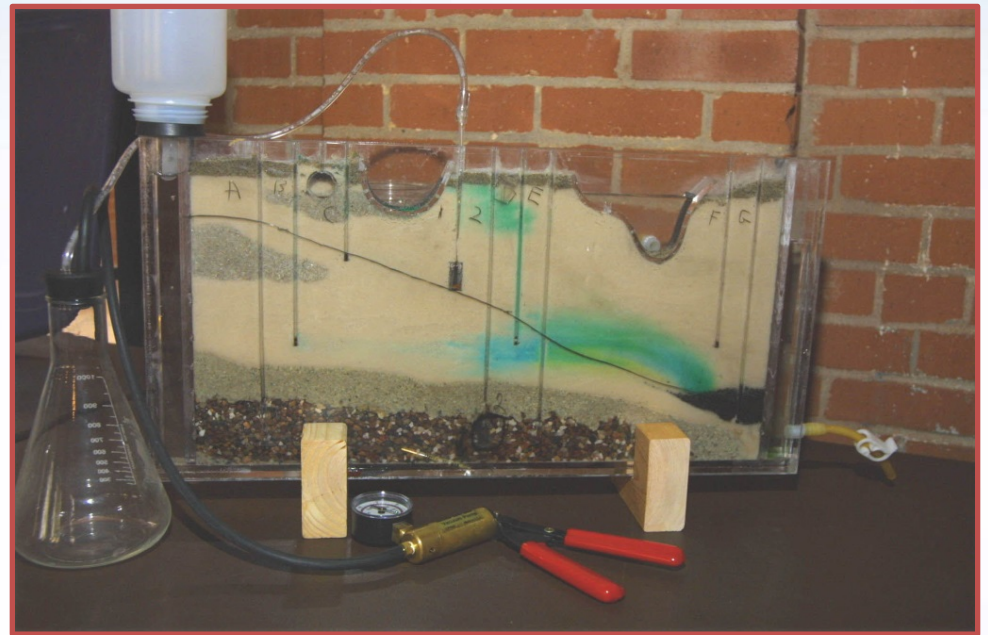


water.tucsonaz.gov/water/conservation

Groundwater In-classroom Presentations

A one-hour groundwater presentation facilitated by highly trained APW staff is an integral part of the 3-month long integrated science units.

- The presentation is supported by pre- and post-instruction.



Reached 10,318
6th Graders
since 2010!

Reached 22,986
3rd Graders
since 2007!

The Groundwater System

Groundwater is the least understood and least taught part of the water cycle.

- The presentation ensures that students understand:
 - groundwater is a system within the water cycle
 - water is between grains of sand and gravel
 - groundwater moves because gravity works
 - groundwater is relevant because it's part of our water supply



Arizona Water Festival



A targeted program designed to instill a deeper understanding of water in the earth system and Arizona's water resources combining:

- A day of student exploration at a community festival
- Teacher professional development on a standards-based unit
- Volunteer involvement
- Opportunity for sponsors and collaborators to invest in effective education



Reached 5,692
students so far!

arizonawet.arizona.edu/programs/arizona_water_festival

The Water Festival Model: Student Learning

The Water Cycle



Water Conservation



Groundwater



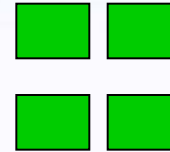
Watersheds



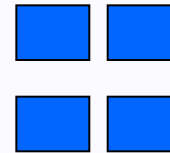
Red Area



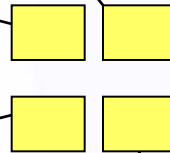
Green Area



Blue Area



Yellow Area



Staging
Crew

Parking
and
Bus
Drop-off

School Water Audit Program

SWAPping water waste for water efficiency



STEM education that incentivizes school and community water conservation through student-driven inquiry and students acting to install technology that save water.



Projected
674,709
gallons
saved by
students!

arizonawet.arizona.edu/programs/school_water_audit

Water Scene Investigations



The WSI Program inspires participants to adopt home water conservation practices through the installation of water efficient technology and comparison of their savings with other water users.

Bringing it Home

Projected
805,362
gallons saved
by students!



arizonawet.arizona.edu/wsi

Discovery Program



Vision: Engage people in exploration that leads to new nature discoveries in their communities

Goals:

- Discover new things about the natural world
- Think through questions about nature in a systematic way
- Become more aware of outdoor opportunities; close to home and out of town
- Learn about the work of scientists



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AND LIFE SCIENCES

COOPERATIVE EXTENSION

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