



# There's No New Water! Curriculum

[www.4-h.org/curriculum/water/](http://www.4-h.org/curriculum/water/)



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## Background

### Need for Science Literacy

- National and international assessments have shown low levels of science literacy among school-age youth for the past several decades.

### Need for Water Conservation

- Clean, available water is critical for life on the planet.
- Issues of water usage and conservation have been at the forefront of national debates.
- Recent reports project water shortages in many regions of the world by 2030.

### Role of 4-H Youth Development

- Nonformal education programs, such as 4-H, can provide learning opportunities that expand curriculum offerings and complement classroom teaching

### Curriculum Development Process

- *There's No New Water!* was developed by UC Davis faculty and undergraduate student interns.
- Activities were developed through an iterative process that included pilot testing.
- Content was peer reviewed by water experts at the USDA and University of California.

"The world is running out of fresh water. ... With every passing day, our demand for fresh water outpaces its availability, and ... unless we dramatically change our ways, between one-half and two-thirds of humanity will be living with severe freshwater shortages within the next quarter-century." - Barlow and Tony Clarke

## Curriculum

- Engages youth in exploring concepts and science processes around water quality and conservation.
- Designed for high school-aged youth.
- Intended for delivery in out-of-school group settings facilitated by an adult.
- Activities designed around the use of inquiry and experiential learning.
- Curriculum contains six sequential learning modules that utilize effective pedagogy and scaffold learners' knowledge and skills.

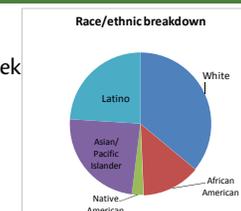
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## Outcome Evaluation

### Methods

- Implemented once a week for eight weeks at two California high schools.
- Students were enrolled as freshmen in earth science class or members of an afterschool science club.
- n=65; ages 14-17; 57% female.
- Survey administered at conclusion of implementation.



### Results

- Understanding of Science Content:
  - Measured using 8 paired retrospective Likert scale questions.
  - t-test comparisons revealed improved content knowledge understanding relative to all questions ( $p \leq .0002$ ).
- Life Skills Development:
  - Measured using 19 Likert scale questions.
  - Most youth reported "some" or "a lot" of improvement on a majority of the questions.
  - Highest reported value: Learning the importance of protecting the environment (74% learned "some" or "a lot").

"If there was more education and awareness about water issues, if we started to really think about the natural limits, about where humans and ecosystems have to work together to deal with water, if we were to start to think about efficient use of water, we could reduce the severity of the problems enormously." - Dr. Peter Gleick, interview with Circle of Blue (July 8, 2008).