

Riverside Public Utilities School Education Program

4th Grade Energy Education Program

5th Grade Water Education Program

6th Grade Conservation Education Program





Education Program Background

- **2001 school education program was developed, electricity science lessons began in 4th grade classrooms**
- **Fall 2007, program was expanded to 5th grade classrooms to include water education after the water reclamation charge was implemented**
- **2012 Updated and expanded the existing program**
- **STEM concepts were included, science loan kits and book donations added, streamlined lessons to allow service to wider audience**





4th Grade Energy Classes

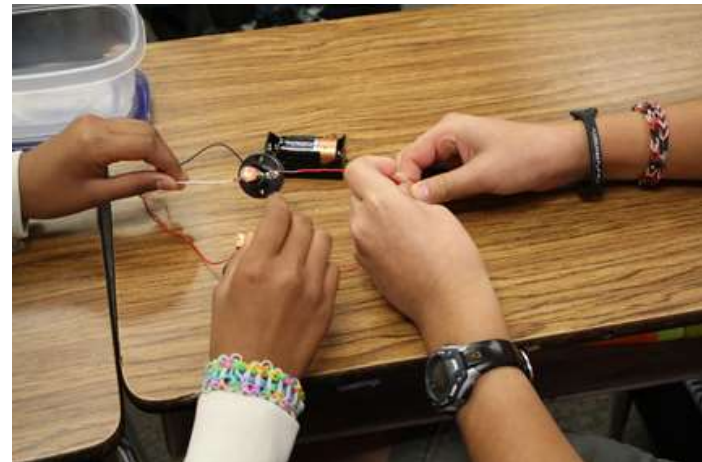
Thirty Minute Direct Instruction

- Electron flow, current electricity, parallel & series circuits
- Magnets, magnetic fields and electromagnetics
- Conservation



Sixty Minute Hands on Lab

- Teacher selected labs
- All lab materials provided by RPU
- Circuit building, magnetic motors, electromagnets



Extending the Lesson

- Includes student and teacher guides.
- Designed for small group, independent studies
- Snap-Circuit Electronics kit
- Attractions Advanced Magnetics Kit
- Optional worksheets can be downloaded for use with loan kits



- High interest, science themed trade books
- More than 300 books donated to date
- Book plates affixed to all books
- A different title donated for each class visited





5th Grade Water Education Program

Thirty Minute Direct Instruction

- Chemistry of water
- Water Cycle
- Local water resources/source to tap
- Water Conservation



Sixty Minute Hands on Lab

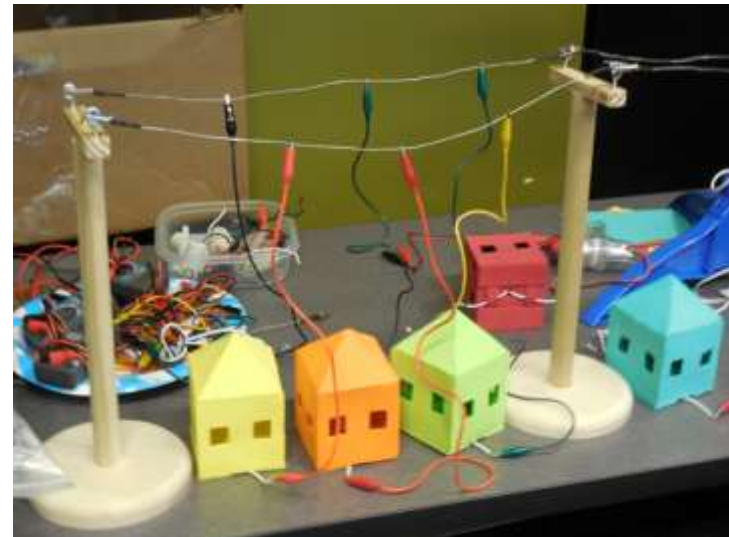
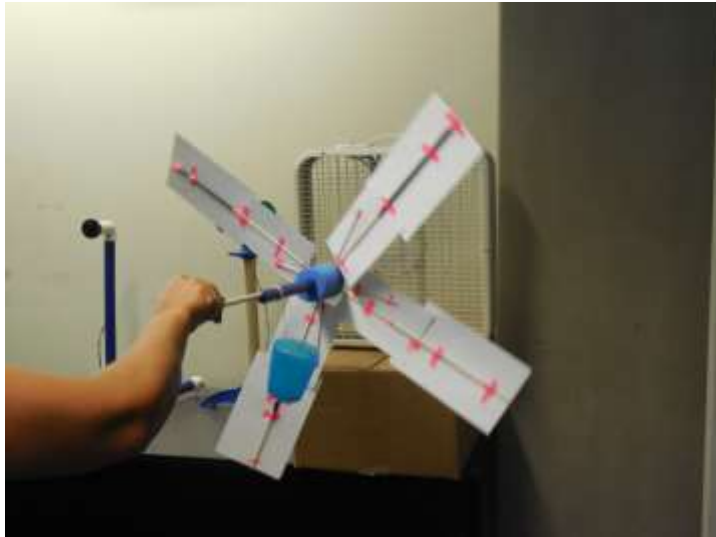
- Teachers choose lab activity
- Water Cycle in a Jar, Build a Model Aquifer, Build a Model Water Shed
- All Lab materials supplied by RPU





Middle School Science Programming

- **Renewable Energy/Conservation**
- **Standards based**
- **Technology Driven**
- **Engineering concepts to support STEM Education and Next Generation Science Standards (NGSS)**





Loan Kit Costs

Rolling Suit Case	71.96
Snap Circuit 300 Kit	68.80
Advanced Magnetics Kit	53.99
Kill-A-Watt Device	24.99
Total Loan Kit Cost	219.74
Twelve Loan Kits	\$2,636.88

Rolling Suit Case	71.96
Global Water Quality kit (6)	83.70
Storage Containers (6)	7.78
Earth Ball	13.95
Lemon Juice	3.35
Salt	3.19
Vinegar	1.13
Total Loan Kit Cost	185.10
Twelve Loan Kits	\$2,221.20



2014–2015 Participant Numbers

- There are 38 public elementary schools, in two districts, in the RPU service area.
- We have identified 16 private and charter schools in the RPU service area.
- This school year to date I've conducted 126 classes at 30 different schools for a total of over 4000 students.
- An additional 4000 students have participated in other community outreach/education programs
 - Middle/high school career fairs
 - District level science fairs
 - Read Across America
 - School science festivals





Agency Collaborations

- **University of California Riverside**
- **Riverside Public Library**
- **Riverside Parks and Recreation Department**
- **Boy/Girl Scouts of America**
- **Riverside Neighborhood Partnership**
- **Western Municipal Water District**
- **Riverside Metropolitan Museum**





Benefits of an In-House Program

- **Branding, agency and specific program promotion, increased visibility in the community**
- **Flexibility with programming allowing to tailor to special requests**
- **Developing a more personal relationship with our community**
- **Teaching science vs edutainment, hands on vs assembly format**
- **Allows the utility to be an educational resource**





Future Expansions

- **Continuing collaboration with UCR to develop accurate tracking of program results**
- **Developing classroom programs specifically for lower elementary students**
- **Increasing use of technology to reach greater number of students**
- **Developing High School Academy Program**
 - **Work force development**
 - **Promote STEAM Education**
 - **Develop mentorships between local students and industry professionals**
- **Developing Community College Internship Program**

