



DiscoveryScience
FOUNDATION

Presentation of

Sean Fitzgerald

Vice President, Sales & Strategic Development

To



**URBAN WATER
INSTITUTE, INC.**
A Non-Profit Organization

THE CUBE

- 501c3 Non Profit Organization
- Two Locations
 - OC – Established 1998
 - LA – Opened 2014
 - 650,000+ Guests Per Year



OUR MISSION

We **INSPIRE** and **EDUCATE** young minds through engaging **SCIENCE-BASED** programs and exhibits to create a meaningful **IMPACT** on the **COMMUNITIES** we serve.

I N S P I R E

E D U C A T E

I M P A C T

CORE INITIATIVES



I N S P I R E

E D U C A T E

I M P A C T



CUBE EDUCATION

230,000+ Students Each Year

160,000+ Through Partner Education

111,468 Through Water Programs

Ranked 3rd Nationally

I N S P I R E

E D U C A T E

I M P A C T



DiscoveryScience
FOUNDATION

OUR PERSPECTIVE ON WATER EDUCATION

I N S P I R E

E D U C A T E

I M P A C T



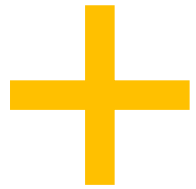
KEYS TO SUCCESS

Commitment

Integration

Applicability

COMMITMENT

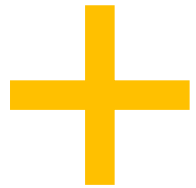


Longitudinal
Measurable Programs



“Checking the Box”
Gaps in Public Understanding

INTEGRATION

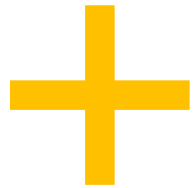


Multiple Touch Points
Generally Positive Perception



Silos
Lack of Common Goals

APPLICABILITY



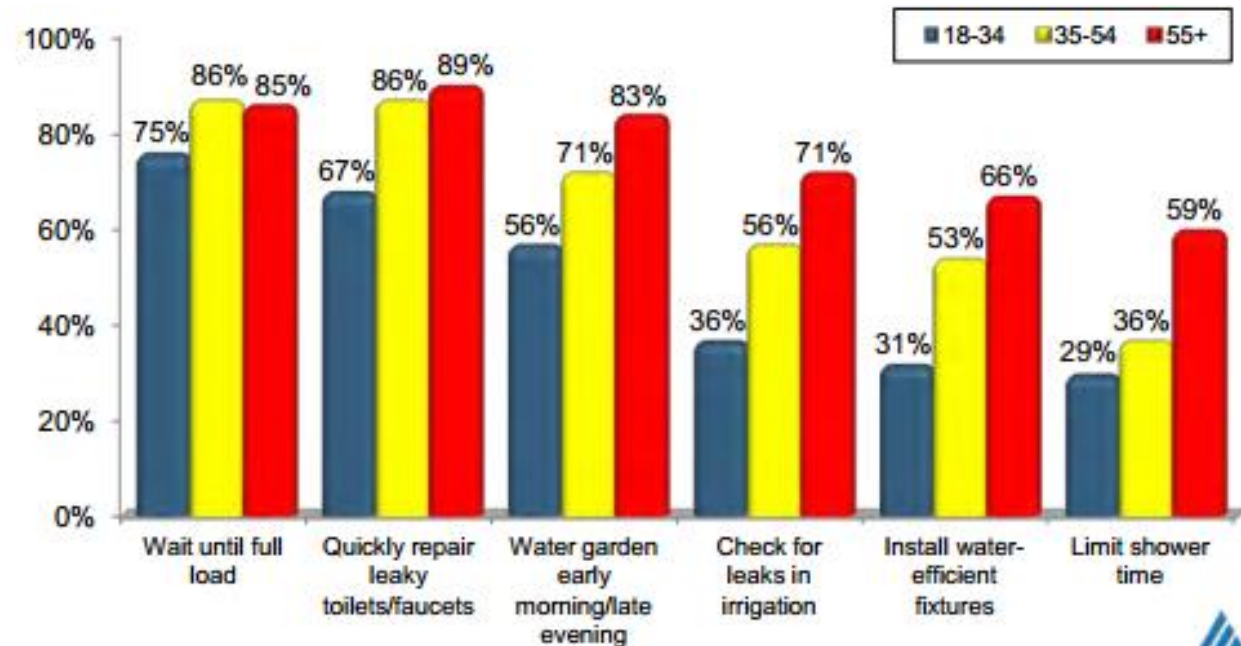
Easily Understood Practices
Visible Results



Low Hanging Fruit Diminishing
Changing Demographics

GENERATION GAP?

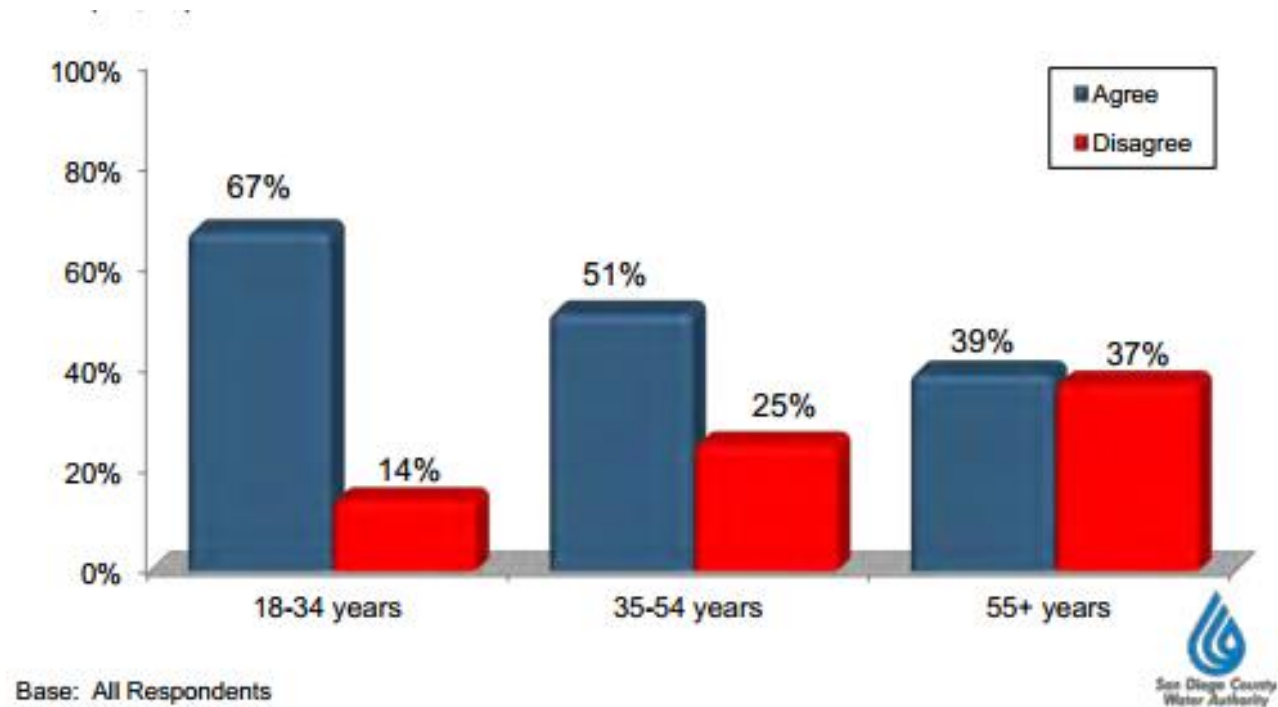
Recent SDCWA
Survey shows
application of basic
WUE practices
varying widely by
age range....



Base: "Applicable" Respondents "Always" participating in these activities

GENERATION GAP?

...but younger generations also feel they can do more!



SUGGESTIONS

Deepen Commitment

Unify Budgets

Measure and Report

Calibrate Regularly

Innovate



DiscoveryScience
FOUNDATION

A NEW OPPORTUNITY: NEXT GENERATION SCIENCE STANDARDS

I N S P I R E

E D U C A T E

I M P A C T



CURRENT STANDARDS

Kindergarten Physical Sciences

1. Properties of materials can be observed, measured, and predicted. As a basis for understanding this concept:
 - a. Students know objects can be described in terms of the materials they are made of (e.g., clay, cloth, paper) and their physical properties (e.g., color, size, shape, weight, texture, flexibility, attraction to magnets, floating, sinking).
 - b. Students know water can be a liquid or a solid and can be made to change back and forth from one form to the other.
 - c. Students know water left in an open container evaporates (goes into the air) but water in a closed container does not.

NEXT GENERATION

Next Generation Science Standards: K-2 Engineering Design

K-2-ETS1 Engineering Design		
Students who demonstrate understanding can:		
K-2-ETS1-1.	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	
K-2-ETS1-2.	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	
K-2-ETS1-3.	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	
The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i> :		
Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Asking Questions and Defining Problems Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions.</p> <ul style="list-style-type: none"> Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1) Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1) <p>Developing and Using Models Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.</p> <ul style="list-style-type: none"> Develop a simple model based on evidence to represent a proposed object or tool. (K-2-ETS1-2) <p>Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> Analyze data from tests of an object or tool to determine if it works as intended. (K-2-ETS1-3) 	<p>ETS1.A: Defining and Delimiting Engineering Problems</p> <ul style="list-style-type: none"> A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1) Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1) Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1) <p>ETS1.B: Developing Possible Solutions</p> <ul style="list-style-type: none"> Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people. (K-2-ETS1-2) <p>ETS1.C: Optimizing the Design Solution</p> <ul style="list-style-type: none"> Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (K-2-ETS1-3) 	<p>Structure and Function</p> <ul style="list-style-type: none"> The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-2)
<p><i>Connections to other DCIs in this grade-band:</i> <i>Connections to K-2-ETS1.A: Defining and Delimiting Engineering Problems include:</i> Kindergarten: K-PS2-2, K-ESS3-2 <i>Connections to K-2-ETS1.B: Developing Possible Solutions Problems include:</i> Kindergarten: K-ESS3-3, First Grade: 1-PS4-4, Second Grade: 2-LS2-2 <i>Connections to K-2-ETS1.C: Optimizing the Design:</i> 2nd Grade: 2-ESS2-1</p>		
<p><i>Articulation of DCIs across grade-bands:</i> 3-5.ETS1.A (K-2-ETS1-1),(K-2-ETS1-2),(K-2-ETS1-3); 3-5.ETS1.B (K-2-ETS1-2); 3-5.ETS1.C (K-2-ETS1-1),(K-2-ETS1-2),(K-2-ETS1-3)</p>		

OLD VS. NEW

California State Content Standards:

Students know objects can be described in terms of the materials they are made of (e.g., clay, cloth, paper) and their physical properties.

OLD VS. NEW

Next Generation Science Standards:

Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.



AND THERE'S MORE

Next Generation Science Standards
also incorporate changes in teaching
methodology and encourage
connections to Common Core English
Language Arts and Mathematics

I N S P I R E

E D U C A T E

I M P A C T



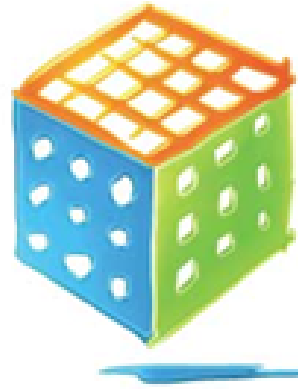
WHAT'S NEXT?

NGSS Adopted in 2013

Implementation Task Forces Meeting

Districts Forming Training Plans

Teachers Need More Help



DiscoveryScience
FOUNDATION

THANK YOU!

I N S P I R E

E D U C A T E

I M P A C T