Blue Crew Water Stewards: Tackling the CEC Problem Through Youth Education

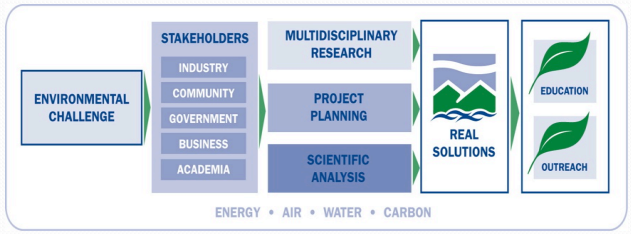
CREEC September 2013

Institute for Environmental Solutions

CONTAMINANTS OF EMERGING CONCERN

Introduction to IES

The Institute for Environmental Solutions is an independent non-profit organization that engages stakeholders to deliver technically sound solutions to complex environmental and health problems—without unwanted side effects.



© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

The IES CEC Project

Mission: Reduce CEC concentrations entering wastewater and reduce human exposure to these contaminants

Goals

1. Establish scientific base of understanding about CECs
2. Affect personal behavior to purchase or make less hazardous personal care and household products
3. Engage community stakeholders to address reduction and prevention of CECs
4. Develop methods to improve youth knowledge of CECs and how to reduce them
5. Establish IES as the objective science-based education resource for CECs.
6. Long term: Look for ways to objectively evaluate the effectiveness of CEC reduction and prevention strategies

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Finding the right audience for our workshops

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

New target audience: Elementary school students

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Blue Crew Water Stewards Program: Mission and goals

Mission: Educate Mitchell Elementary 6th graders about CECs and engage them in activities that aim to reduce CEC concentrations in our water.

Goals

1. 75% of students decrease their chemical footprint from the first workshop to the third workshop
2. 50% of students to increase their score on the knowledge check by the end of the third workshop
3. Improve the program design through the evaluations of students and volunteers
4. Incorporate pillars of Community Based Social Marketing (CBSM) into the workshops

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Community Based Social Marketing

- What is CBSM?
- The three pillars: Commitment, Prompts, and Norms

I care about clean water
www.i4es.org
Institute for Environmental Solutions

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Program methodology: Interactive and hands-on activities

- Experimentation
- CEC-free product creation
- Use of props (plants, aquatic wildlife, and sample products)

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Workshop 1

Initial Knowledge Check

BPA: What is it? Where is it?

BPA Game: Which products contain BPA?

At-home assignment

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211 9

Workshop 2

Check-in on at-home assignment progress

DEET Introduction

Visual Learning: Aquatic life in Clear Creek

Making DEET-free bug repellent

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211 10

Workshop 3

Apple Experiment: The function of food preservatives

BHA Introduction

Product Creation: Contaminant-free snacking

At-home assignment wrap up

Final Knowledge Check

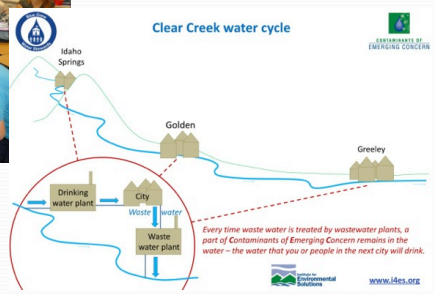
© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211 11

Teaching a complex subject

- Vocabulary associated with CECs can be complex
- Teaching in context: Why should 6th grade students care about CECs?
- Contaminants that relate directly to students' life

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211 12

Communicating water pollution



Challenge to reduce chemical footprint at home

- Students counted metal and plastic containers in recycling
- Each student came up with a goal to reduce their use and disposal of these products
- Students completed a second count before the final workshop to assess their success in reducing their chemical footprint

Impact and Accomplishments

- Improved scores on four out of five questions on knowledge check signified that students increased their knowledge of three CECs
- At-home assignment: 70% of students decreased their chemical footprints
- Addressing the three pillars of CBSM:
  - Commitment
  - Prompts
  - Norms

Student evaluation results

Students enjoyed:

- Hands-on activities
- CEC-free snacking
- DEET-free bug spray

Students want to see:

- More activities, games, and interaction with classmates
- More enthusiastic, creative explanation of CECs
- Clearer explanation of material

Students learned that:

- BPA, DEET, and BHA are bad for the environment and should be avoided
- "We have to be conscious of what we use because we can make a difference."
- "Our water isn't completely cleaned so we have to take care of it ourselves."

Adult evaluation results

Adult observers liked:

- The students can take away what they learned to their homes.
- Loved that you are out spreading the word with the future. Goes well with the ELF Program here.

Suggested improvements:

- Connecting back to previous workshops is very helpful-children learn from repetition.
- Work on presentation to be more engaging for the kids.
- More hands-on, more info, a little faster.

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Recommendations/ Areas to Improve

Improve student involvement

- Allow students to voice their opinion of the risks of CECs and offer possible solutions
- Increase hands-on activities

Improve student commitment project

- At-home assignment was complicated and hard to grasp for many students
- Simplification or redesign of at-home assignment could produce better student understanding of reducing CEC use in the home
- Allow adequate time to fully explain assignment

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Recommendations/ Areas to improve (cont.)

- Simplify and narrow scope of content (more understandable and digestible for students)
- Pre-workshop class visit
- Improve program funding
  - Per student program cost

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

Next steps

- BCWS Workshop in a Box
- Working with more schools in Jefferson County
- Teacher training
- Questions and suggestions

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211

The CEC Project Team

Carol Lyons
Andrea Stucky
Elodie Boucher
Patrick DePriest
Jodi Jones
Alex Key

CONTAMINANTS OF EMERGING CONCERN

Join or contribute to the IES CEC Project!

- **Volunteer!**
- **Join the Steering Committee!** (Meets quarterly)
- **Contribute: www.ColoradoGives.org/i4es**

Institute for Environmental Solutions

Solutions@i4es.org
303-388-5211

© 2013 Institute for Environmental Solutions | www.i4es.org | Denver, Colorado USA | 303.388.5211