Recipe for Sustainable Science: An Introduction to Green Chemistry in the Middle School

Michael Rottas
Director, Environmental Health & Safety
Pfizer Global Research & Development (Groton, CT)

Rachel Pokrandt
Director, Professional Education and Leadership
The Keystone Center For Education

Green Chemistry at Pfizer

- Formal program began in 2001
- Multi-disciplinary approach
- Site-based and Corporate-wide efforts
- EPA Presidential GC Award – 2002 (Sertraline)
- UK IChemE Crystal Faraday Award – 2003 (Sildenafil)
- Closely linked to Corporate Citizenship philosophy

Pfizer Foundation Science Education Program

Goals are to:
- Help raise the standards of scientific literacy for all students;
- Broaden the pool of future scientists;
- Improve the quality of the workforce in a high-tech environment; and,
- Offer opportunities for students from diverse backgrounds.

The Keystone Center

SCIENCE AND PUBLIC POLICY
- Multi-stakeholder Facilitation
- Policy Dialogues
- Strategic Planning & Conflict Resolution
- Leadership Forum

EDUCATION
- Student Programs
  - CASE - School Groups
  - Discovery Camp
  - Teacher Training
  - Key Issues
  - Tri-State Key Issues
  - Global Climate Change
  - Mars Exploration Issues
  - Green Chemistry

The Middle School Green Chemistry Module

- Hands-on science
- Interdisciplinary
- Mapped to national education standards and green chemistry principles
- Ease of implementation

Timeline

- February 2005 draft unit complete
- April 2005 Pilot teacher training
- Implementation
- Feedback
- March 2006 completed curriculum
- April and August 2006 teacher training institutes
- NSTA presentations
- Launch
Recipe for Sustainability: The challenge

- Introduction to Non-Biased Pedagogy
- Initial introduction to Green Chemistry concepts – Dr. John Warner
- Simulation
- Introduced by a popular character

The Philosophy

- Your mission should you choose to accept it?
- Surveys and market research
- Oops I did it again

Research and Development

- Lifecycle Lettering
- Production practice
- Volume Variance

The Process

- Melt Me
- Recipe Redo
- Shape Shifting
- A Rainbow of Colors

The Considerations

- Waste Management Math
- Production Line Woes

Marketing and PR

- Labeling
- Color of your Crazy Crayon
The Final Product

• Green Chemistry Award
• Crayon Bizarre

The Evaluation

• Is it lonely being Green?

The High School Module

• Goals
  • Interdisciplinary
  • Mapped to national education standards and green chemistry principles
• In development
• Beta testing
• Pilot training fall 2006

Outcomes

➢ Increase number of students interested in science
➢ Provide dynamic framework for the delivery of science content
➢ Equip teachers with Green Chemistry activities
➢ Ingrain principles of Green Chemistry in students
➢ Develop network of educators and business representatives

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