



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

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| <ul style="list-style-type: none">• Goals• Interdisciplinary• Mapped to national education standards and green chemistry principles | <ul style="list-style-type: none">• In development• Beta testing• Pilot training fall 2006 |
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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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