IPRO 332
Our Energy Future

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1.1 Problem

- Consumers lack knowledge about the effects of their energy choices
1.2 Objectives

- To provide comprehensive information about the way consumer choices affect our environment

Example

**Water:** 1 lb. of beef = 1 week of showers

**Petroleum:** 1 lb. of beef = 1 gallon of gasoline
1.3 Goals

- Create Energy Education Module
- Establish Relationships
- Plan for Continuation
2.1 Team structure

**SPRING 2007**

- Subject matter sub-team research topics
- Energy Topics presentation 02/22/07

**RESEARCH**

- Entire team initial planning
- Program sub-team research methods
- Teaching methods presentation 02/27/07

**IMPLEMENTATION**

- Entire team brainstorming and discussion
- Ecological Footprint lesson
- BP A+ for Energy grant proposal 03/23/07

**FALL 2007**

- Ecological Footprint lesson + Wind Energy

**LATER**

- Ecological Footprint lesson + etc.
2.2 Subject Matter sub-team

Themes:

Filters:
- Student Interest
- Curriculum Gaps
- Difficulty to Obtain Expertise
- Timeless
- Grant Proposal
- “Bang for the Buck”

Subject:
EOCOLOGICAL FOOTPRINT
2.4 The Ecological Footprint

- The area of ecologically productive land and water needed to provide resources for one person and to assimilate his or her waste
2.5 Features of the Eco Footprint

- Relatable
- Comparison-based
- Interesting
- Cross-curricular

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ACRES</th>
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<tbody>
<tr>
<td>FOOD</td>
<td>4</td>
</tr>
<tr>
<td>MOBILITY</td>
<td>2</td>
</tr>
<tr>
<td>SHELTER</td>
<td>3.5</td>
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<tr>
<td>GOODS/SERVICES</td>
<td>4.9</td>
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<tr>
<td><strong>TOTAL FOOTPRINT</strong></td>
<td><strong>14</strong></td>
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In comparison, the average ecological footprint in your country is 24 acres per person.

Worldwide, there exist 4.5 biologically productive acres per person.

If everyone lived like you, we would need 3.2 planets.
3.1 Program sub-team

Video, Virtual Environment Simulation, Multimedia Equipment
Humor Teaching Methods, Physical Model, Interactive Museum Method
Construction Project, Programming Activity, Classroom Extension Activity,
Extra-Curricular Activity, Whiteboard Method, Lecture Method

Engaging
Effective
Reusable Materials/Supplies
Portable Materials/Supplies

Time-sensitive
Comparison-Based

INTERACTIVE MULTIMEDIA
3.2 BP A+ for Energy Grant

- Proposal submitted March 26:
- Fall 2007 “Wind Energy” Module
  - Install a wind turbine on the roof of De La Salle High School
  - Track energy production
  - Report back to class in terms of “Ecological Footprint”
- Expanded Goals:
  - Student Leadership
  - Long-term Planning
  - Bigger, Better Tools
  - Closer Relationship with De La Salle High School
3.3 De La Salle testing

- Day 1: Introduction to the Ecological Footprint
  - Discussion Starters
  - Pre-Test
  - Lecture
  - Calculate Individual Footprint
  - Activity (discuss energy in processing, use, waste)
  - Homework Assignment
  - Post-test
3.4 De La Salle testing

- Day 2: Comparing Ecological Footprint sizes
  - Discussion Starters
  - Quick Review
  - Video
  - Comparisons Activity
  - Evaluations
4.1 Testing accomplishments

- Student evaluation feedback
  - "The video helped me see that others...[also] don't know much about the actual impact one makes on the environment."
  - "[I liked] calculating my own ecological footprint and seeing how it compares to the rest of the people."
  - ""I like learning the amount of energy that I use in a daily basis and its effect on the world/community."

- Performance on the Eco Footprint tests
4.2 Continuation: semester 2

- Fall 2007
- Construct 2 follow-up modules (recommend: parts of EF)
  - One incorporating the Wind Turbine acquired from the BP A+ for Energy Grant
- Expand into the Chicago Public School system
- Design a long-term Sustainability Plan
- Explore possibility of creating a business plan
4.3 Continuation: semester 3+

- Spring 2008 – later
- Construct 2 more follow-up modules
- Find other community groups and interested partners to implement the EF modules
- Implement Sustainability Plan
- Design a business plan, if feasible
4.4 Conclusion

- Produced a portable energy education module that is ready for use in area schools
- Used the feedback and results from the De La Salle classroom testing to improve our tools
- Environmental Science van – portable library for CPS teachers
- Ready for next semester's team to elaborate on
4.5 What we learned

- All team members played a crucial role in the success of the module
- Teamwork and communication were vital assets throughout our process
- Project plan changed and was updated throughout the course of the semester
- Used methods of presenting information that adhered to classroom standards
- Having an impact on the De La Salle students’ education was very rewarding
Questions and answers

Thank you for your attention.