

IPRO 332

How Many Earths?

Problem

- Information about sustainability needs concerns and sources is not understandably presented to non-scientific communities.

Mission

To educate the community on sustainability needs, concerns, and sources.

…community

…students

History of the Solution

Timeline of IPRO 332

Spring 2007

- **Energy consumption**
- **PowerPoint presentation**

Fall 2007

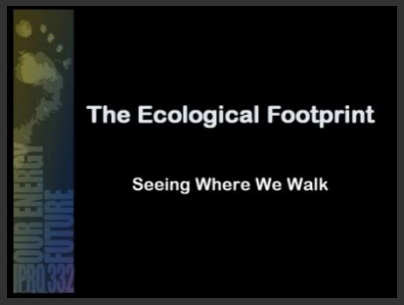
- **Ecological Footprint, Your Energy Choices**
- **Energy game, video, feedback form**

Spring 2008

- **Ecological Footprint, Cradle to Cradle**
- **How Many Earths, website**

Fall 2008

- **Ecological Footprint, Cradle to Cradle teaching kits**
- **How Many Earths, website**



SPRING 2009

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IPRO 332: Spring 2009

How did we contribute to the Mission?

Update work from previous semesters.

Extend material to a younger age base

Develop new high school materials for classrooms

Continue to promote the IPRO through events and a current website

Team Breakdown

IPRO 332

Marketing

- ❑ Organize 3 community events
- ❑ Update the website to include the teaching kits and classroom modules

High School

- ❑ Review and modify *Cradle to Cradle* and *Ecological Footprint* module
- ❑ Develop policy module and test in classroom

Elementary

- ❑ Establish a module for K-6 classrooms
- ❑ Test it in the classroom

Who Did We Reach?

Academia

CLASSROOM

STUDENTS

IPRO 332

Community

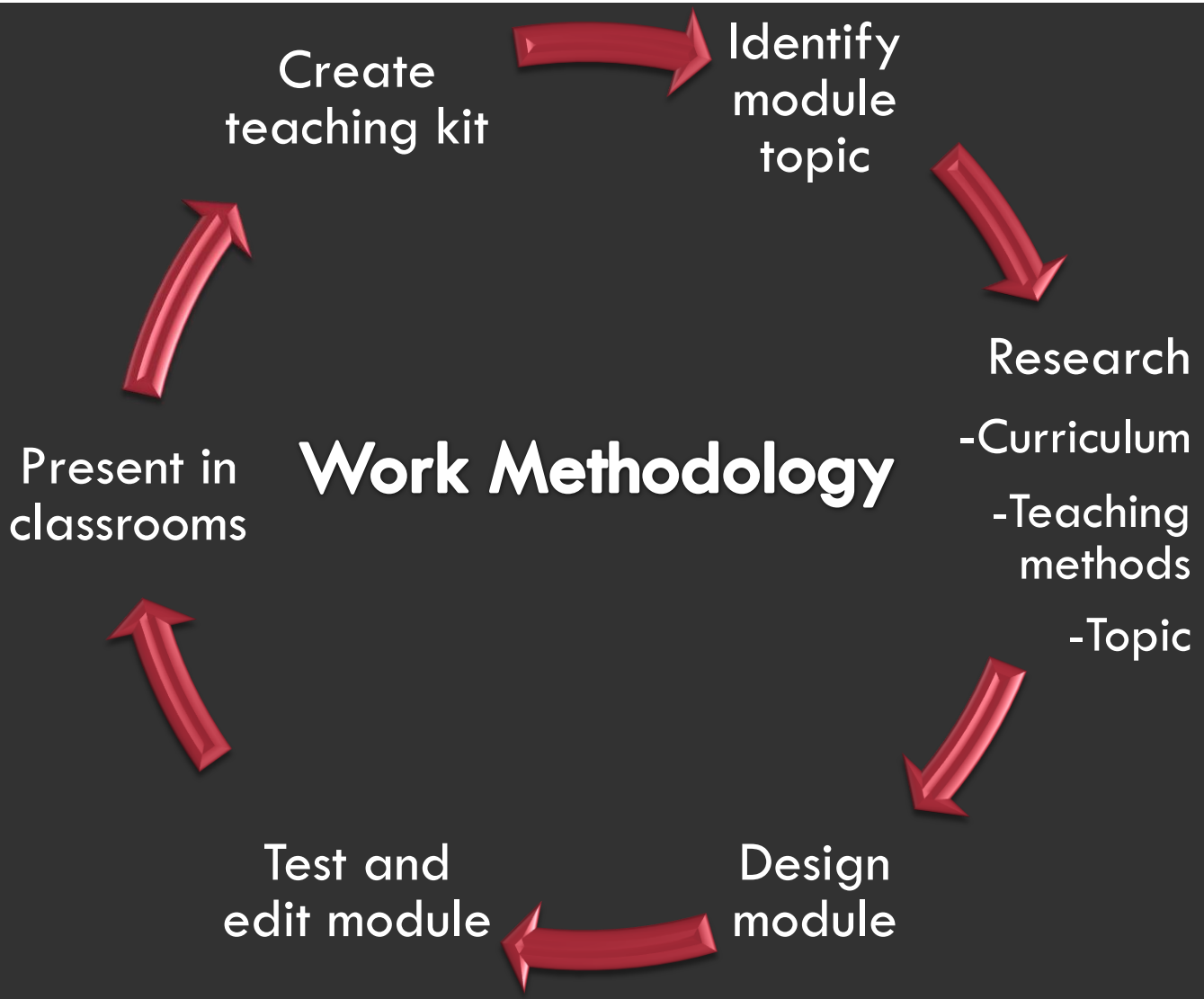
PUBLIC EVENTS

FAMILIES

Work Phases

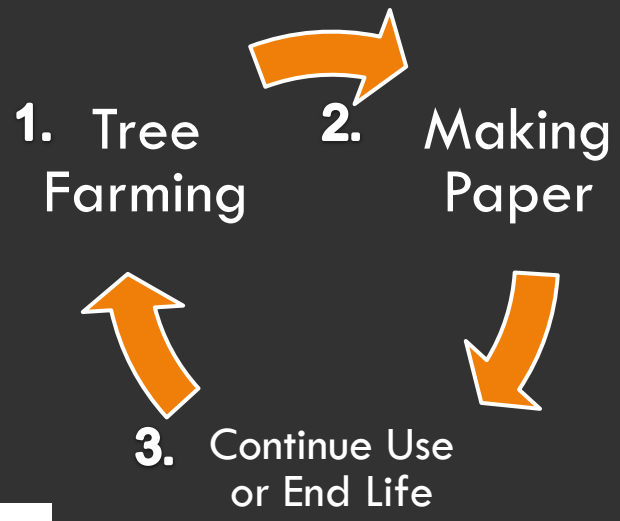
	Elementary	High School	Marketing/Public Relations
Phase 1	• Research module topics/ teaching methods/ current curriculum	• Modified previous modules • Researched module topics/gauged interest	• Targeted community events • Made a user friendly website layout
Phase 2	• Develop three life cycle modules •Met with teachers	• Created Policy module • Met with teachers	• Set up Irish Earth Day • Loyola Earth Day
Phase 3	• Present paper making module •Conclude results/establish future goals	• Present Policy module • Outlined teaching kit	• Finalized the website • IIT book drive • Followed up with contacts from events

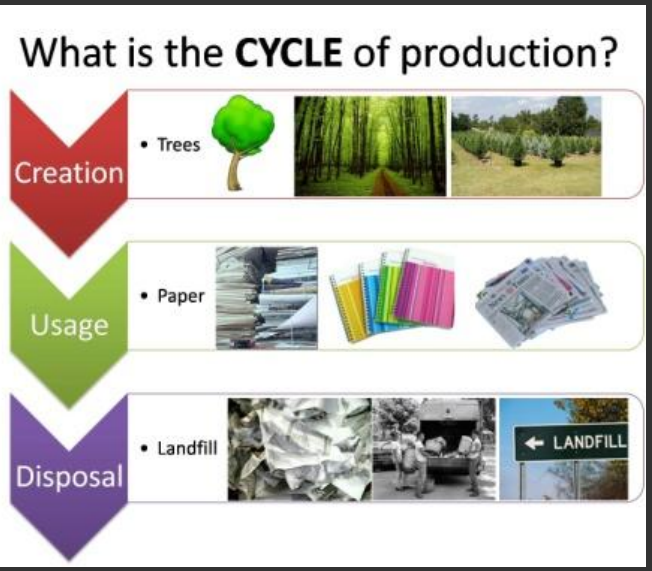
Our Approach



RESULTS

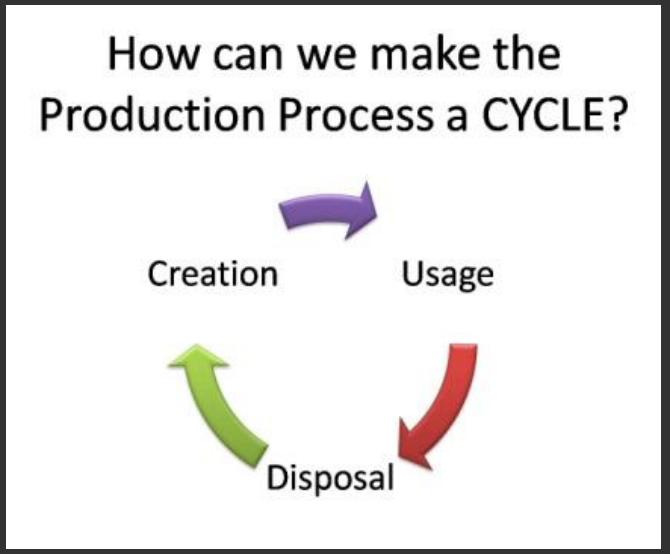
Results - ELEMENTARY





Each lesson includes:

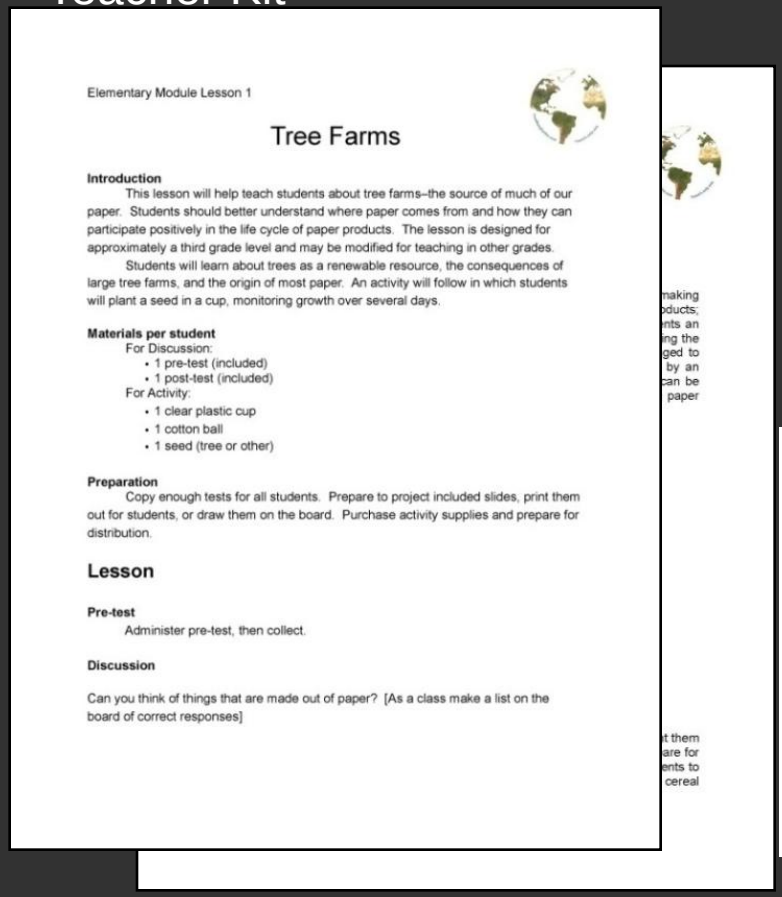
1. Presentation
2. Interactive activity
3. Teachers kit



Results-Elementary

Lesson 1: Tree Farming

Teacher Kit



Elementary Module Lesson 1

Tree Farms

Introduction

This lesson will help teach students about tree farms–the source of much of our paper. Students should better understand where paper comes from and how they can participate positively in the life cycle of paper products. The lesson is designed for approximately a third grade level and may be modified for teaching in other grades.

Students will learn about trees as a renewable resource, the consequences of large tree farms, and the origin of most paper. An activity will follow in which students will plant a seed in a cup, monitoring growth over several days.

Materials per student

For Discussion:
- 1 pre-test (included)
- 1 post-test (included)

For Activity:
- 1 clear plastic cup
- 1 cotton ball
- 1 seed (tree or other)

Preparation

Copy enough tests for all students. Prepare to project included slides, print them out for students, or draw them on the board. Purchase activity supplies and prepare for distribution.

Lesson

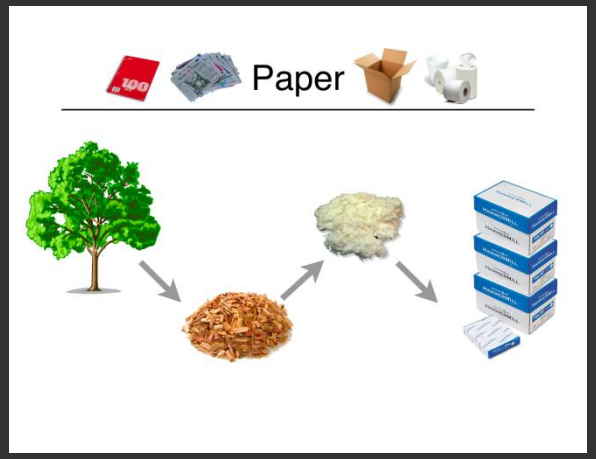
Pre-test

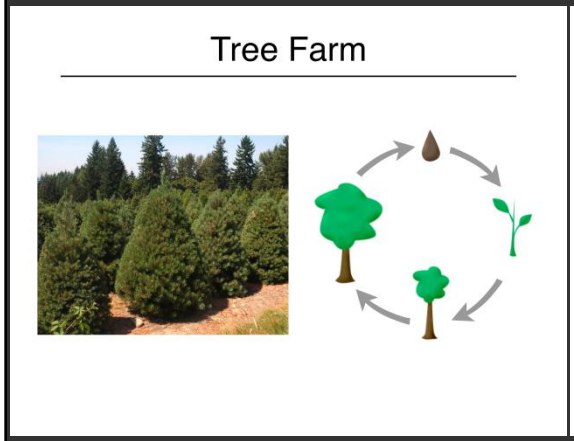
Administer pre-test, then collect.

Discussion

Can you think of things that are made out of paper? [As a class make a list on the board of correct responses]

Presentation Slides





Results-Elementary

Lesson 2: Making Paper

Teacher Kit

Elementary Module Lesson 2

Making Paper

Usage

Introduction

This lesson focuses on the materials required and the process used for making paper. Paper is a valuable resource in our society. It is used to make many products; from newspapers to refrigerator boxes. The goal of this lesson is to give students an understanding of the materials and energy used to create paper. By understanding the work needed to make paper, one can appreciate it, and ultimately be encouraged to recycle. The lesson starts with a discussion of the history of paper, followed by an explanation of the current production processes accompanied by slides which can be projected or drawn on the board. Finally there is an activity of actually making paper which reinforces the information learned in the lesson.

Materials

For Discussion:
- 1 pre-test (included) per student
- 1 post-test (included) per student
- Slides (included)

For Activity:
- Blender
- Water
- Corn Starch
- Mesh in frame
- Old news papers or other used paper
- Rolling Pin

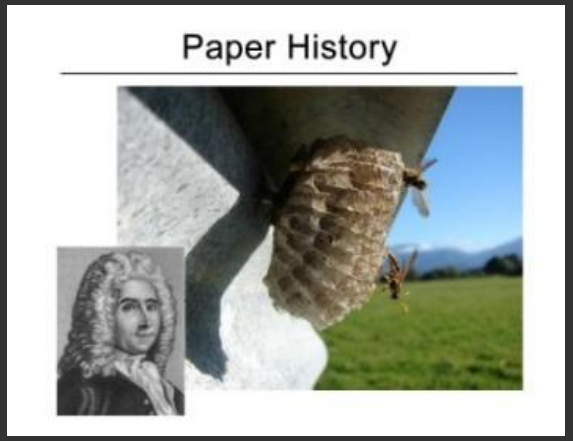
Optional:
- Iron
- Food coloring
- Glitter

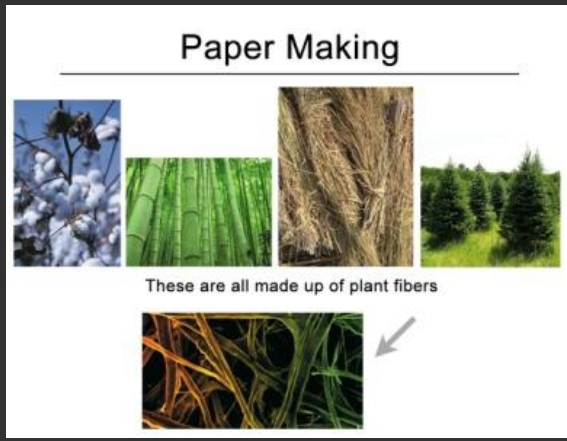
Preparation

Copy enough tests for all students. Prepare to project included slides, print them out for students, or draw them on the board. Purchase activity supplies and prepare for distribution. One or two days before this activity is to take place assign the students to bring used newspapers or other used paper products (worksheets, newspapers, cereal boxes etc.), but nothing too dense or that cannot be torn easily.

Activity

Presentation Slides

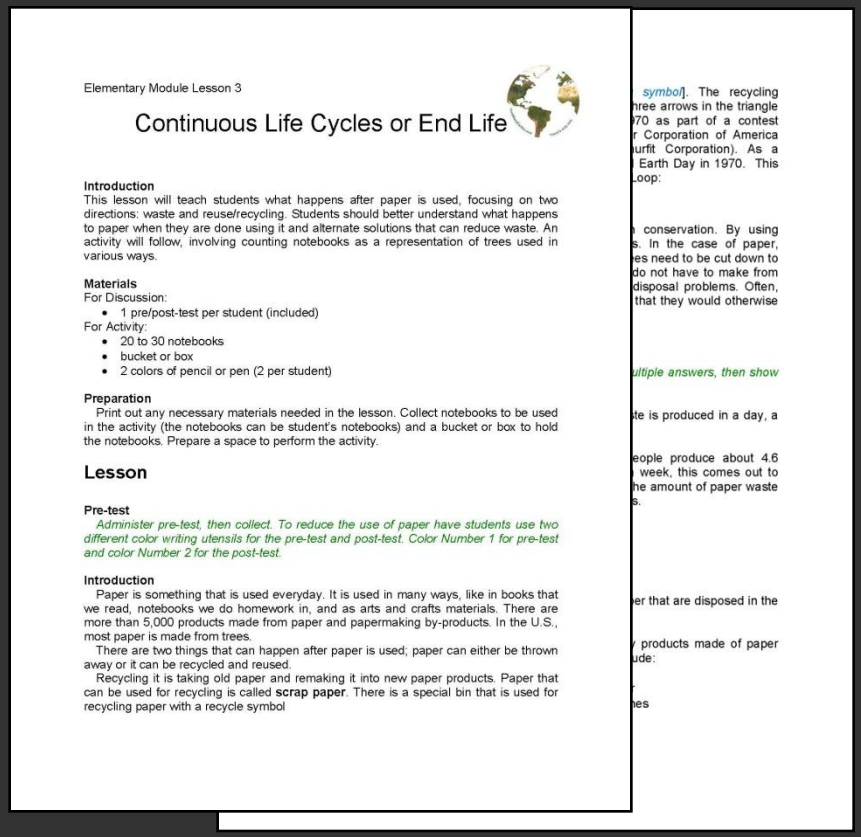




Results - Elementary

Lesson 3: Continuous Use or End Life

Teacher Kit



Elementary Module Lesson 3

Continuous Life Cycles or End Life

Introduction
This lesson will teach students what happens after paper is used, focusing on two directions: waste and reuse/recycling. Students should better understand what happens to paper when they are done using it and alternate solutions that can reduce waste. An activity will follow, involving counting notebooks as a representation of trees used in various ways.

Materials
For Discussion:
- 1 pre/post-test per student (included)

For Activity:
- 20 to 30 notebooks
- bucket or box
- 2 colors of pencil or pen (2 per student)

Preparation
Print out any necessary materials needed in the lesson. Collect notebooks to be used in the activity (the notebooks can be student's notebooks) and a bucket or box to hold the notebooks. Prepare a space to perform the activity.

Lesson

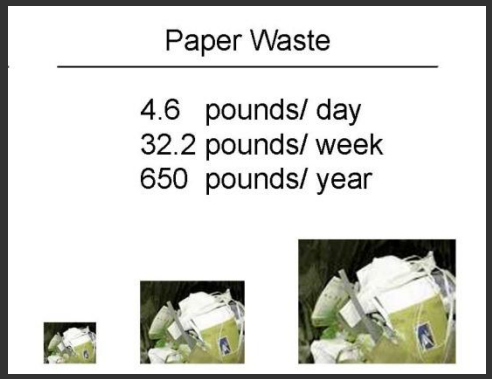
Pre-test
Administer pre-test, then collect. To reduce the use of paper have students use two different color writing utensils for the pre-test and post-test. Color Number 1 for pre-test and color Number 2 for the post-test.

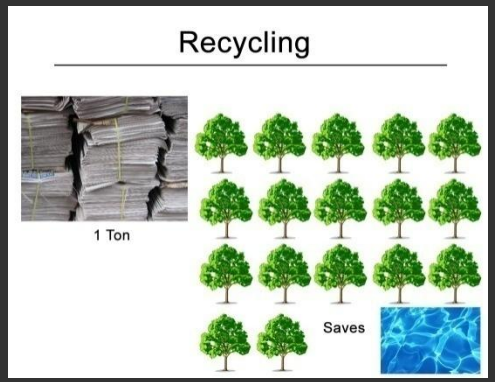
Introduction
Paper is something that is used everyday. It is used in many ways, like in books that we read, notebooks we do homework in, and as arts and crafts materials. There are more than 5,000 products made from paper and papermaking by-products. In the U.S., most paper is made from trees.

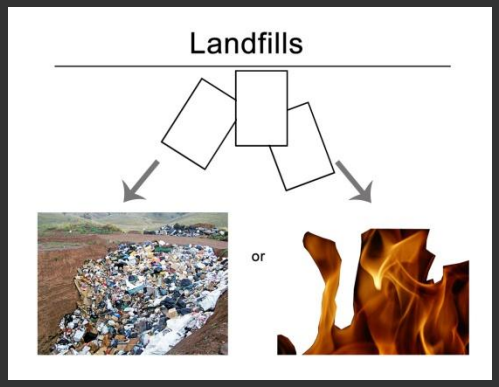
There are two things that can happen after paper is used; paper can either be thrown away or it can be recycled and reused.

Recycling it is taking old paper and remaking it into new paper products. Paper that can be used for recycling is called **scrap paper**. There is a special bin that is used for recycling paper with a recycle symbol

PowerPoint Presentation







Results - STUDENT INTERACTION

"I think my favorite part was seeing students teaching younger students something to make the world a better place."

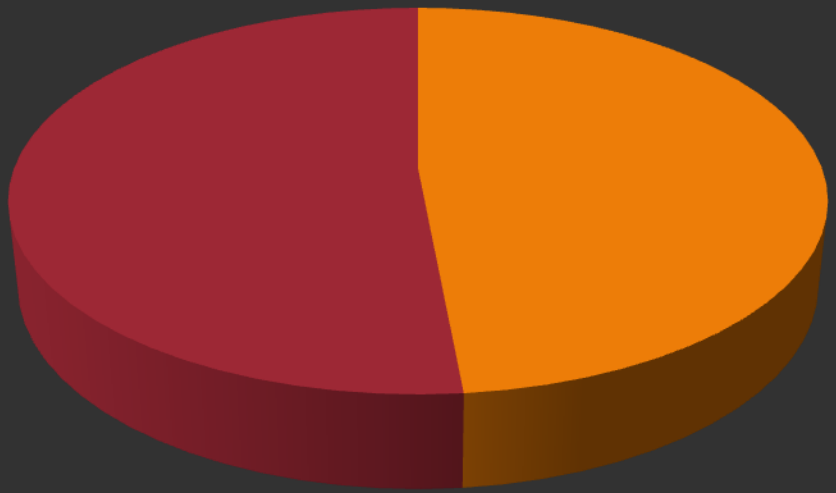
4th grade student from Pershing West

Results - ELEMENTARY

RESULTS from classroom visits

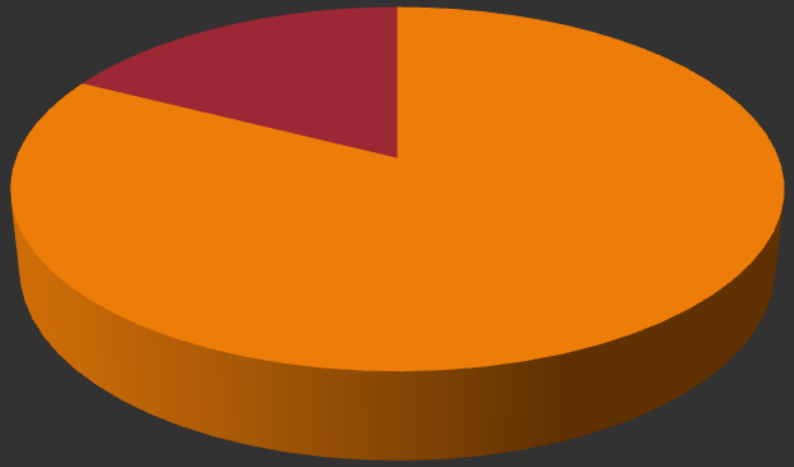
PRE-TEST

48.5%



POST-TEST

82.5%



Tested 53 Fourth Grade Students

Results - HIGH SCHOOL

Cradle to Cradle revisions

Policy Module

Ecological Footprint revisions

Policy Module Example

Energy and Policy in America

How the government is promoting a more sustainable way of living

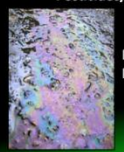
President Obama's Energy Plan

- Cap and Trade regulations
- Tax Credits for Electric vehicles
- 10% by 2012 all electricity from renewable by 25% 2025
- High speed rail system across country

Water Pollution

Heavy Metals

Pesticides/Fertilizers



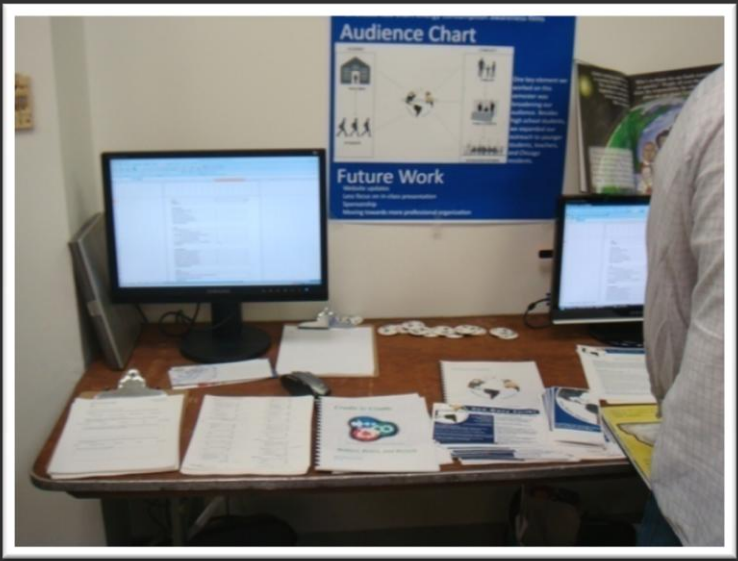
Petroleum Products

And More!

Results - E-WEEK

February 21st

- Presented material from the previous semester
- Learned a lot about successful interactive community events



Results - IRISH EARTH DAY

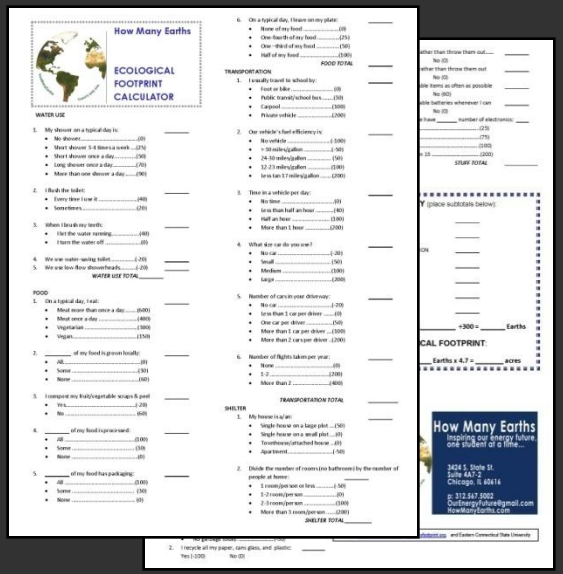
IRISH EARTH DAY

Posters used at the events

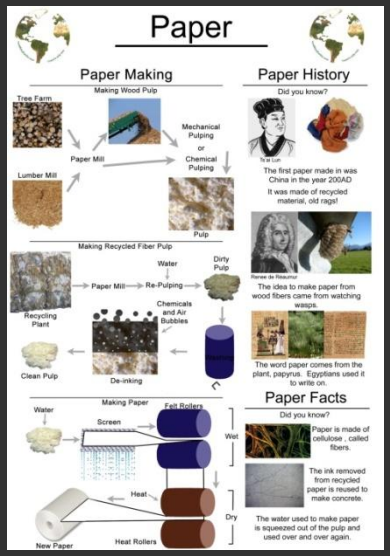
Images from Irish Earth Day

Results- LOYOLA EARTH DAY

Ecological Footprint Calculator



Poster and hand-outs



Images from the event

Results - IIT BOOKDRIVE

BetterWorldBooks
WWW.BETTERWORLD.COM

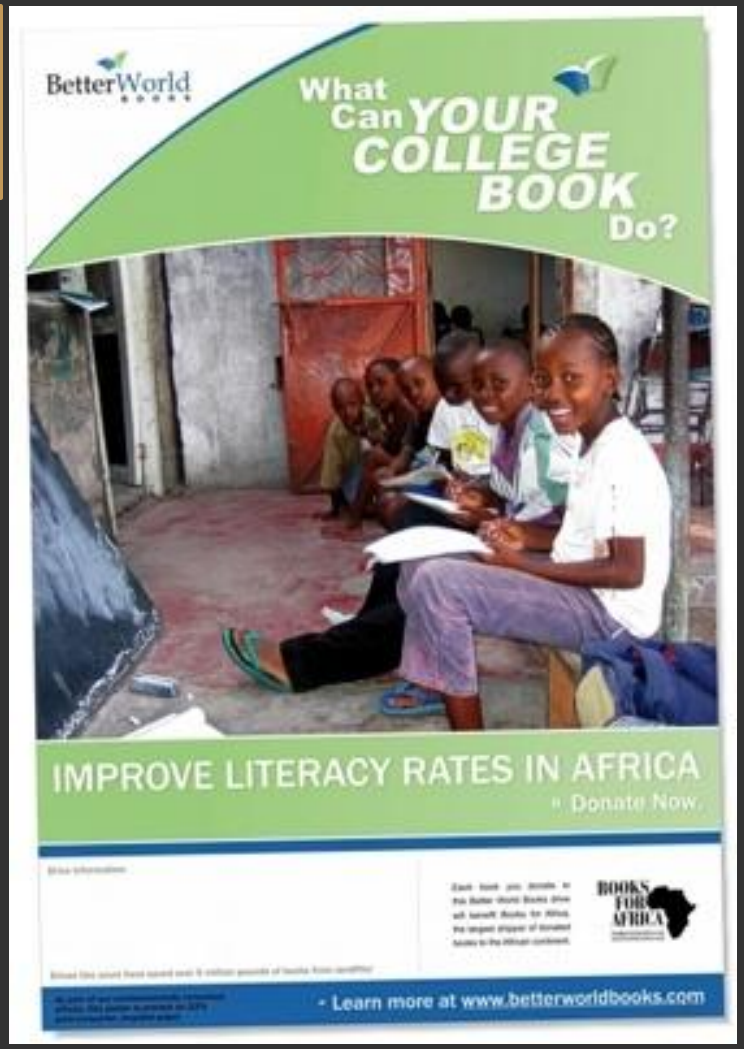
IIT Book Drive has 5 locations

1. MSV
2. SSV
3. Galvin Library
4. MTCC
5. Gunsaulus Hall

April 12-May 3rd

Books Saved From Landfills:
23,130,774

As of 4/30



Results - WEBSITE

CONCLUSION

Achievements

- ❑ Updated and finalized existing materials
- ❑ Developed a Policy module for high school classrooms
- ❑ Taught Policy module in two classrooms
- ❑ Developed a Life Cycle module for elementary classrooms with 3 lessons
- ❑ Taught 1 of 3 lessons in 2 classrooms
- ❑ Attended 3 community events
- ❑ Hosted a book drive on campus
- ❑ Developed a user friendly website

The Future of IPRO 332

The uniqueness of IPRO 332 has been the ability as students to simplify complex environmental and sustainability information and take this information and present it to various communities within the general public.

Recommendations

Extending the network we reach and the subjects we cover…

- ❑ Branch out into more subject matter for elementary schools
- ❑ Help in after school programs for students
- ❑ New lessons for high school students
- ❑ More games or interactive quizzes
- ❑ Follow up with teachers and students
- ❑ Measure long-term Impact

Collaborative Efforts

- Pershing West Magnet School
  - Sarah Vera, Fourth Grade Teacher
  - Eve Ewing, Sixth Grade Teacher
  - Cheryl Watkins, Principal
- DeLaSalle Boys and Girls School
  - Linda Frank, Eleventh Grade Teacher
  - Bob Chrupka, Eleventh Grade Teacher
- IPRO 320, Professional Networking for Teachers
- IIT Community Affairs
- Better World Books
  - Lakita Anderson, Contact
- James Braband

Questions?