Service Learning Project: G-WOW Institute

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Ashland High School

International Year of Light: What one School Can Do.

Ashland High School students will produce a DVD, upload pictures about light to geotagged google earth markers or read a book and present findings that can be shown at local libraries, local expos and fairs that tell an exciting story that focuses on Ashland High School's sustainability projects:

This project will be one of many at AHS that tell the real stories of how individuals have gotten involved to bring about positive changes to combat global warming. The telling of these stories is meant to inspire others to do the same. The DVD, uploaded photos and book discussion will also show the problem-solving and technical steps that were taken: to audit energy use used for lighting, find energy leaks, develop solutions, and monitor outcomes.

Like schools in the Washburn and Superior districts, Ashland High School has become one of the leading schools in Wisconsin with regards to energy policies. Many people don't know this yet. The Ashland School District has worked closely with Focus on Energy to improve its energy efficiency use, and as a result, is leading other school districts in the state to save the school district money and made significant contributions to reducing dependency on fossil fuels.

To introduce and build excitement for this project, my partner Theresa Paulsen and I took 50 physics and natural science students to Raspberry Island Lighthouse. We also partnered with Rick Erickson from the Bayfield School district and it was funded by the G-Wow Institute and the National Park Service.

The students split **into 3 groups** on the island.

One group performed service learning projects: washing windows, harvesting the fall garden crop and general maintenance with park service employees.

The second group walked to the beach for physics projects they developed in the classroom.

> Example beach projects:
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> The physics of skipping stones, Causes of Wave action, original ukulele song written and performed on the beach, physics of beach poetry slam refraction of beach glass and so on.

The third group got a tour of the Raspberry Island Light House and learned the physics of lighthouses.

BACK IN THE CLASSROOM:

My physics class then voted our theme for the 2014-15 school year to be The Year of Light. We choose this to align with ***The International Year of Light 2015.***

Project Link: International Year of Light 2015:

http://www.light2015.org/Home/About/Resources.html

I then challenged each student to take one of the projects below that had to do with the physics of light and how it affected our society in terms of energy use,

1. **Invisible Light Project**-THE AUGMENTED REALITY EXPERIENCE

   http://www.invisible-light-project.com/#

   1. Take pictures related to the world of light
   2. Upload and create your geotagged markers
   3. Share your experience with the world
   4. Download the APP and explore your environment

   App for submitting light images

   https://play.google.com/store/apps/details?id=com.arapp.iyl

2. **Read a book about the increasing problems with light pollution.** The book was written by an author who used to be a professor at Northland College and has information about Ashland's own changing light pollution. After reading the book, students develop a powerpoint or other similar presentation to lead the class in a discussion about their own Traditional Environmental Knowledge about the changing amount of light in our world and the effects it is having on us.

The End of Night: Searching for Natural Darkness in an Age of Artificial Light

By Paul Bogard

3. **Make a short DVD about the energy saving projects at AHS**

This project is designed to investigate the ongoing projects that have upgraded the school's energy infrastructure to reduce its dependency on fossil fuels and to save taxpayers money. Most students don't yet know about these projects, let alone people in the region. This project will allow students to uncover this story and to develop their creative and scientific storytelling skills in the process. The telling of the story will put them in contact with a new group of "heroes behind the scene" (maintenance, administration, construction personnel, etc.) who can explain to them why the installation of low wattage LED and fluorescent lighting, heat exchangers, high efficiency boilers, and changing from steam heat to hot water heat are logical yet exciting projects that can combat climate change.