

Understanding Sustainability: A Two-Week Unit for Middle School Science

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With the growing interest in education for sustainable development, (2005-2014 is the UN Decade of Education for Sustainable Development), *Facing the Future* has developed "Understanding Sustainability", a two-unit for Washington's middle school science teachers. The unit is designed to introduce the concept of sustainability and demonstrate the interconnections between some of its main issues: natural resources, human population, and resource consumption. In order to achieve sustainability current human needs must be met without compromising the ability of future generations to meet their needs.

The unit is aligned with Washington's middle school science GLEs and includes updated previously released *Facing the Future* lessons, as well as new lessons and supplementary readings that have been teacher reviewed and classroom tested. Each lesson is fully planned out and includes opportunities for reflection, action projects, handouts, assessment rubrics, and lists of additional resources. During the course of the unit, students learn about their role in a sustainable society, examine the impacts of their choices, investigate their local environment, and design and implement an action plan to reduce their "Ecological Footprint".

At the WSTA conference this Fall, attendees were introduced to "Understanding Sustainability" and had the opportunity to experience several of the activities from the unit. The lessons in the unit address the key concepts of:

- Ecological footprint
- Energy resources
- Fisheries
- Interconnections
- Population growth
- Carrying capacity
- Renewable and nonrenewable resources
- Sustainability
- Systems
- Water resources

Each concept is addressed through the use of engaging, hands-on activities that necessitate critical thinking and collaboration. To illustrate some of these concepts workshop participants experienced a variety of activities they can use with their students such as:

- "Fishing for the Future" – an illustration of the tragedy of the commons that has students "fishing" for candy-coated chocolates using straws
- "Watch Where You Step" – an examination of the components of ecological footprint through the creation of a web diagram of the resources, processes, and impacts of an everyday item
- "Sustainability Audit" – an investigation of the energy, water, waste, and transportation systems of their school with groups presenting findings and recommendations for improvements
- "Who You Callin' Bigfoot?" – a one week study done by students of one aspect of their lives that could be changed to reduce their ecological footprint

Throughout the unit, students explore a variety of systems and issues while discovering the integral roles that they play in all of them. Sustainability provides the framework for students to learn about their role in the larger world and empowers them to find the possibilities to make changes for the better.

"Understanding Sustainability" is expected to be available for download from *Facing the Future's* website by the end of the year. For those who would like to find out more about the unit or have other questions, please contact Dave Wilton at *Facing the Future* (dave@facingthefuture.org or 206-264-1503). To learn more about global issues, sustainability, and the organization's other materials please visit www.facingthefuture.org.

Facing the Future is non-profit organization based in Seattle that develops curriculum to educate young people to think critically about global issues, sustainability, and positive solutions. The organization develops standards-based, hands-on lessons, accompanying textbooks, and provides professional development for educators. *Facing the Future's* materials are used in all 50 U.S. states and 42 countries around the world.