

Ecosystems & Biodiversity



Land Use



Water Quality



Energy Resources



Air Quality



Michigan Environmental Education Curriculum Support

- Engaging, innovative hands-on student activities designed to increase understanding and appreciation for Michigan's environment.
- Michigan-specific data and problem-solving integrates the economy and the environment.
- Meets Michigan benchmarks for science and social studies; provides MEAP-like assessments.
- University credit and SB-CEU credits will be offered for teacher training sessions to be available Jan-Dec. 2006.

Description of Units

FIVE Michigan-specific units have been developed for grades 4-9. These units provide an opportunity for students to learn about Michigan's economy and environment through outstanding, inquiry-oriented, data-based lessons in Science and Social Studies. The units have been field-tested by 120 teachers in 200 classrooms. They can be adopted into a school's curricula or used as part of an integrated science course.

Ecosystems & Biodiversity (Gr. 4-6; eight lessons)

Explores how organisms interact with their environment, ecosystem services, Michigan's environmental timeline, and concepts related to biodiversity including "Michigan's Web of Life" and "Biodiversity Study." **Lead writer:** Pam Schmidt, Western U.P. Center for Science, Math & Environmental Education

Land Use (Gr. 4-5; eight lessons)

Teaches students how to analyze and understand issues regarding land use and the impacts people have on it with lessons from "Classifying land use" to "Solving land use conflicts." **Lead writers:** Joe Stoltman and Lisa De Chano, Western Michigan University

Water Quality (Gr. 6-8; nine lessons)

Students discover the essential role that water plays in Michigan's economy and our lives; calculate direct and indirect water use, explore how Michigan water-sheds are connected to the Great Lakes, identify characteristics of healthy streams, analyze Michigan stream data, and investigate challenges to the Great Lakes. **Lead writer:** Joan Chadde, Western U.P. Center for Science, Math & Environmental Education

Air Quality (Gr. 7-9; eight lessons)

Explores the sources, types and health effects of air pollutants in Michigan and examines current Michigan issues through lessons on: "Why Should We Be Concerned About Air Quality?" and "How Can We Tell What the Quality of Air is Today?" Also includes a series of lessons on global climate change and its potential effects on the Great Lakes. **Lead writer:** Janet Vail, Grand Valley State University

Energy Resources (Gr. 7-9; eight lessons)

Addresses Michigan energy use and sources, how electricity is generated, renewable and non-renewable energy resources, energy conservation and efficiency, and environmental sustainability. Students keep an Energy Use Diary, compare Michigan and U.S. per capita energy consumption to energy use in other countries, and calculate their energy footprint. What is Michigan's energy future? **Lead writer:** Heather Luoto, Western U.P. Center for Science, Math & Environmental Education

Every Unit Includes FREE Classroom Materials for Teachers!

- Notebook of 8-10 complete lesson plans that can be taught over 2-4 weeks.
- Background Information, overhead transparencies, answer keys for teachers
- CD of all five units, including extension lessons, supplemental resources, PowerPoints, and more!
- Hands-on activities
- Pre- and post-tests and MEAP-like unit assessments
- Colorful posters

Workshops scheduled locally May 4-5 and June 12-16. See www.wupcenter.mtu.edu or flyers for details, or contact Shawn Oppliger shawn@copperisd.org or 482-0331.

How Can I Get the Materials?

To receive each MEECS curriculum unit, teachers must attend a 4-6 hour training workshop. Workshops* and ALL materials are FREE during 2006. Educators are encouraged to attend workshops for as many units as they'd like. Workshops will be offered at a variety of locations across Michigan. Contact your local Math & Science Center or intermediate school district for a schedule of upcoming workshops or visit the Michigan Department of Environmental Quality's website for a statewide listing: www.michigan.gov/deq-meeecs

*Nominal Fees may be charged for refreshments at workshops.

MEECS Program History

Michigan voters approved \$1 million dollars from the Clean Michigan Initiative (CMI) bond (1998). In 2003, Governor Granholm announced the beginning of the three-year project. The Michigan Department of Environmental Quality (DEQ) and the Michigan Department of Education have worked hand-in-hand to develop sound science-based supplementary environmental education curriculum materials for use by Michigan educators. The five curriculum units have been created by a team of Michigan scientists, resource managers, and classroom teachers with input from government agencies, environmental organizations, businesses, and industry.

This is what teachers and educators are saying about the MEECS units and workshops...

Fabulous lessons in this unit! I'll definitely be using it! Districts should be adopting these units for each appropriate grade level and building. Excellent hands-on real-world connections for students to make personal connections to and remember!
Jessica O'Donnell, science teacher, Spring Lake Public Schools

Wonderful! Thank you! This is an outstanding unit for our 6th and 8th grade curriculum! I will definitely send our other teachers! Betty Crowder, Rochester Schools and Oakland University

The unit is very well organized. The materials are user. The unit will provide better and more locally relevant hands-on activities than our current curriculum. 6th grade teacher, Holy Family School

All of this unit is useful to me. It fits into several of our benchmarks and provides great handouts and student-oriented activities. I plan to share the unit with eight other science teachers at my school. Novi Community School District

I was a participant at the MEECS Water Quality training. I enjoyed the training so much, and thought the presenters did a wonderful job. I have told everybody they MUST go to these awesome trainings!
Jessica Lagalo, Education Director, Inland Seas Education Association, Traverse City, MI

I really enjoyed the water unit session. I would like to use these lessons with teachers in West Virginia.
Todd I. Ensign, Educator Resource Center, NASA IV&V Facility, Fairmont, West Virginia

The unit will do an excellent job of supporting our current science and social studies curriculum. The unit provides a nice sequence of information and activities. 7th grade teacher, Pontiac School District

Governor Jennifer M. Granholm



Steven E. Chester, Director