

## **Strategic Plan Incorporating Quality Indicators October 2006-September 2007**

The Western Upper Peninsula Center for Science, Mathematics and Environmental Education provides services to 19 school districts in the Copper Country Intermediate School District (CCISD) and Gogebic-Ontonagon Intermediate School District (GOISD). The Center provides programming in six basic service areas: leadership, student services, professional development, curriculum support, resource clearinghouse and community involvement.

This strategic plan was created with Quality Indicators and the Michigan Mathematics and Science Center Network Master Plan as a basis and to meet the needs of students and teachers in the Center's service area. Information about the educational needs of the teachers and students was gathered from a formal needs assessment of teachers, program evaluations, along with input from administrators' roundtables.

### **LEADERSHIP**

#### **Performance Effectiveness Indicator**

The Center will assess needs, leverage resources, and promote collaboration in improving mathematics and science education.

#### **Five Year Goals**

- L1.** The Center will influence policy for mathematics and science education in the region, state and nation, by actively participating in the Michigan Mathematics and Science Centers Network.
- L2.** The Center will exert leadership in coordinating educational activities in the CCISD and GOISD to provide equal access to services that meet the needs of teachers and students in the service area.
- L3.** The Center will provide leadership for schools in the CCISD and GOISD by participating in State Wide Initiatives to improve mathematics and science education.
- L4.** The Center will provide leadership in establishing partnerships and programs throughout the Michigan, Upper Peninsula and Great Lakes region.

## Focus of 2006-2007 Programming

<p><b>L1.</b> The Center will influence policy for mathematics and science education in the region, state and nation, by actively participating in the Michigan Mathematics and Science Centers Network.</p>		
<p><i>Planned Programming and Services</i></p> <p>Participate in professional development and leadership activities of the Michigan Mathematics and Science Center Network.</p> <p>Participate on the Evaluation Committee of the Michigan Mathematics and Science Center Network.</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Does participation in the Michigan Mathematics and Science Center Network influence programming in the Center's service area?</p> <p>Does participation in the Evaluation Committee allow the Michigan Mathematics and Science Center Network to be more effective?</p>	<p><i>Data to Collect</i></p> <p>Document participation in the network activities.</p> <p>Meeting minutes of activities of the Evaluation Committee.</p>
<p><b>L2.</b> The Center will exert leadership in coordinating educational activities in the CCISD and GOISD to provide equal access to services that meet the needs of teachers and students in the service area.</p>		
<p><i>Planned Programming and Services</i></p> <p>Collaborate with school districts, community organizations, local businesses, Michigan Technological University (MTU), and Finlandia University to coordinate teacher and student activities.</p> <p>Maintain an email list-serve and website to provide teachers with information on professional development opportunities and student services.</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Does collaboration result in more student and teacher programs in the Center's service area.</p> <p>Does the email list-serve and website provide an effective way for teachers to receive information?</p>	<p><i>Data to Collect</i></p> <p>Document programs that are result of collaborative efforts with other organizations.</p> <p>Survey teachers concerning email list-serve effectiveness.</p> <p>Keep track of website hits through a page counter.</p>
<p><b>L3.</b> The Center will provide leadership for schools in the CCISD and GOISD by participating in State Wide Initiatives to improve mathematics and science education.</p>		
<p><i>Planned Programming</i></p> <p>The Center will implement the activities of the Michigan Mathematics Leadership Academy (MMLA) in Center's service area.</p> <p>The Center will implement the activities</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Does the MMLA provide high quality professional development for teachers in Center's service area?</p> <p>Does the MSLA provide high quality</p>	<p><i>Data to Collect</i></p> <p>Collect workshop agendas and evaluations.</p> <p>Collect workshop agendas and</p>

<p>of the Michigan Science Leadership Academy (MSLA) in the Center's Service area.</p> <p>The Center will provide professional development to teacher in the region on the Michigan Environmental Education Support (MEECS) materials.</p>	<p>professional development for teachers in Center's service area?</p> <p>Does the MEECS provide high quality professional development for teachers in Center's service area?</p>	<p>evaluations.</p> <p>Collect workshop agendas and evaluations.</p>
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## **STUDENT SERVICES**

### **Performance Effectiveness Indicator**

Students impacted by Center programs demonstrate progress toward mathematics and science literacy and elect to participate in mathematics and science opportunities in greater numbers.

### **Five -Year Goal**

**SS1.** The Center will work with MTU, area schools and community organizations to support, develop and implement standards based interdisciplinary programs that engage students in higher order thinking, substantive conversation and real world applications.

### **Focus of 2006-2007 Programming**

**SS1.** The Center will work with MTU, area schools and community organizations to support, develop and implement standards based interdisciplinary programs that engage students in higher order thinking, substantive conversation and real world applications.

<i>Planned Programming</i>	<i>Assessment Question for Center Performance Effectiveness</i>	<i>Data to Collect</i>
<p>Develop and implement the Western Upper Peninsula Science Fair for students in grades fourth through eighth.</p>	<p>Does the science fair develop understanding of the scientific method?</p>	<p>Interviews with students and examples of student work.</p>
<p>Work with local schools to development and implement science fairs in their own buildings.</p>	<p>Do the local science fair develop understanding of the scientific method?</p>	<p>Interviews with students and examples of student work.</p>
<p>Develop and implement after-school classes for K-8 grade students focusing on real world applications of science, mathematics, environmental stewardship and technology.</p>	<p>Do after-school classes motivate students to participate more science and mathematics opportunities?</p>	<p>Program evaluations given to students.</p>
<p>Coordinate and support FIRST LEGO League teams in the CCISD and GOISD.</p>	<p>Does FIRST LEGO League engage students in problem solving activities?</p>	<p>Interviews with students and examples of student work.</p>
<p>Coordinate and conduct forest, pond and winter ecology field trips for students and teachers at school forests, state parks, and local wildlife areas.</p>	<p>Do field trips promote understanding of ecosystems and promote environmental stewardship?</p>	<p>Program evaluations given to students.</p>
<p>Develop and implement “We Can Make A Difference” Earth Day Program.</p>	<p>Does the Earth Day promote environmental stewardship?</p>	<p>Program evaluations and surveys given to students.</p>
<p>Develop and implement TIVITZ mathematics program.</p>	<p>Does the TIVITZ program engage students in problem solving activities?</p>	<p>Program evaluations and surveys given to students.</p>

## PROFESSIONAL DEVELOPMENT

### Performance Effectiveness Indicator for Professional Development:

Educators who participate in Center Professional Development reflect best instructional practices in their own setting.

### Five-Year Goals:

**PD1.** The Center will provide high quality professional development opportunities that help teachers implement the state and national standards and model effective teaching.

**PD2.** The Center will partner with various departments at MTU to offer high quality professional development opportunities to teachers in the service area.

### Focus for the 2006-2007 Programming

**PD1.** The Center will provide high quality professional development opportunities that help teachers implement the state and national standards and model effective teaching.

<i>Planned Programming</i>	<i>Assessment Question for Center Performance Effectiveness</i>	<i>Data to Collect</i>
<p>Conduct teacher workshops on the Michigan Environmental Education Curriculum Support (MEECS) during the Fall of 2006.</p> <p>Provide quality and sustained professional development on lesson study, inquiry and mathematics content through the <i>Building Bridges</i> project</p> <p>Provide quality and sustained professional development on High School Reform and the Michigan Merit Exam</p>	<p>Do the MEECS workshops prepare teachers to implement the MEECS units in their classrooms?</p> <p>Does the <i>Building Bridges</i> project increase the content knowledge of the participating teachers?</p> <p>Does the <i>Building Bridges</i> project improve the teaching and learning of mathematics?</p> <p>Does the <i>Building Bridges</i> project improve student achievement in the classrooms of the participating teachers?</p> <p>Does this professional development provide teachers with tools to implement high school content expectations and prepare students for the Michigan Merit Exam?</p>	<p>Workshop evaluations and teacher surveys.</p> <p>Pre and post -tests of the participating teachers' content knowledge.</p> <p>Classroom observations of participating teachers.</p> <p>Pre and post -tests of the participating students' mathematics knowledge and skills</p> <p>Workshop evaluations and teacher surveys, and teacher lesson plans.</p>

**PD2.** The Center will partner with various departments at MTU to offer high quality professional development opportunities to teachers in the service area.

<i>Planned Programming</i>	<i>Assessment Question for Center Performance Effectiveness</i>	<i>Data to Collect</i>
Develop and implement the Educators Science and Mathematics Institute Series in Mathematics.	Does this institute series provide teachers with resources and strategies to engage students in real world applications of mathematics?	Teacher self-evaluations and examples of unit plans created by participating teachers.
Develop and implement Educators Professional Development Institute Series in High School Mathematics.	Does this institute series provide teachers with resources and strategies to engage students in real world applications of mathematics?	Student pre-post tests, teacher self-evaluations and examples of lesson and unit plans created by participating teachers.
Develop and implement the Global Change Institute	Does this institute provide teachers with resources and strategies to engage students in the scientific research on climate change?	Workshop evaluations and examples of unit plans created by participating teachers.
Develop and implement the Forest Ecology Institute.	Does this institute provide teachers with resources and strategies to engage students in the scientific research on forest ecology?	Workshop evaluations and examples of unit plans created by participating teachers.

## **CURRICULUM SUPPORT**

### **Performance Effectiveness Indicator**

Districts will develop and implement aligned curriculum in mathematics and science classrooms.

### **Five Year Goals**

**CS1.** The Center will cooperate with schools in the CCISD and GOISD to implementing their school improvement plans and improving student achievement.

**CS2.** The Center will work with local schools and districts to align their mathematics and science curriculum and instructional materials to the Grade Level Content Expectations and the High School Course Content Expectations. Professional development will be delivered to give teachers the training and resources to implement the curriculum effectively and engage students in authentic learning and assessment.

### **Focus of the 2006-2007 Programming**

<p><b>CS2.</b> The Center will work with local schools and districts to align their mathematics and science curriculum and instructional materials to the Grade Level Content Expectations the High School Course Content Expectations. Professional development will be delivered to give teachers the training and resources to implement the curriculum effectively and engage students in authentic learning and assessment.</p>		
<p>Planned Programming</p> <p>Provide quality and sustained professional development on High School Reform and the Michigan Merit Exam</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Does this professional development provide teachers with tools to implement high school content expectations and prepare students for the Michigan Merit Exam?</p>	<p>Data to Collect</p> <p>Workshop evaluations and teacher surveys, and teacher lesson plans.</p>

## COMMUNITY INVOLVEMENT

### Performance Effectiveness Indicator

Individuals and groups from the community understand and support the goals and activities of the Center.

### Five Year Goals

- C1.** The Center will develop and implement programs in science and mathematics education for the local community.
- C2.** The Center will seek community partnerships, support and involvement in developing center programming to enhance the teaching and learning of science, mathematics and environmental education.
- C3.** The Center will communicate to stakeholders and the community, the value of the Center's programming in promoting literacy in science, mathematics and environmental stewardship.

### Focus of 2006 -2007 Programming

<p><b>C1.</b> The Center will develop and implement programs in science and mathematics education for the local community.</p>		
<p><i>Planned Programming</i></p> <p>Develop and conduct Family Science and Math Nights to be held at elementary schools in the CCISD and GOISD.</p> <p>Develop and conduct the Science Festival for students, parents and younger siblings at the Western UP Science Fair.</p> <p>Develop and conduct Environmental Stewardship and Sustainability</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Do family science nights encourage family involvement in their children's education?</p> <p>Does the science festival encourage family involvement in their children's education?</p> <p>Do the workshops give the participants a better understanding of</p>	<p><i>Data to Collect</i></p> <p>Parent surveys</p> <p>Parent surveys</p> <p>Participant surveys</p>



workshops.	environmental stewardship and sustainability?	
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<b>C3.</b> The Center will communicate to stakeholders and the community, the value of the Center’s programming in promoting literacy in science, mathematics and environmental stewardship.		
<i>Planned Programming</i>	<i>Assessment Question for Center Performance Effectiveness</i>	<i>Data to Collect</i>
The Center will maintain and utilize email list-serves of teachers and administrators to provide information about programs offered by the Center.	Are the email list-serves an effective way to distribute information about programming?	Teacher and administrator’s surveys.
The Center will maintain a website that contains current information about programs, resource clearinghouse and links to useful educational websites.	Is the website an effective way to distribute information about programming?	Teacher, community and administrator’s surveys

## RESOURCE CLEARINGHOUSE

### Performance Effectiveness Indicator

Center will assess needs and provide resources that promote improvement in science and mathematics education.

### Five-Year Goals

- R1.** The Center will provide teacher resources that support standards based instruction and authentic assessment.
- R2.** The Center will maintain and utilize email list-serves of teachers and administrators to provide information about professional development opportunities, student programs, community programs and curriculum issues.
- R3.** The Center will maintain a website that contains current information about center programs, resource clearinghouse and links to useful educational websites.

### Focus of 2006-2007 Programming

<b>R1.</b> The Center will provide teacher resources that support standards based instruction and authentic assessment.		
<i>Planned Programming</i>	<i>Assessment Question for Center Performance Effectiveness</i>	<i>Data to Collect</i>
Maintain a lending library of standards-based activity guides, children literature, activity kits and equipment.	Do teachers from all districts in the service area use the lending library?	Records of what materials and equipment is checked out.

<b>R2.</b> The Center will maintain and utilize email list-serves of teachers and administrators to provide information about professional development opportunities, student programs, community programs and curriculum issues.
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<p><i>Planned Programming</i></p> <p>The Center will maintain and utilize email list-serves of teachers and administrators to provide information about programs offered by the Center.</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Are the email list-serves an effective way to distribute information about programming?</p>	<p><i>Data to Collect</i></p> <p>Teacher and administrator's surveys.</p>
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<p><b>R3.</b> The Center will maintain a website that contains current information about center programs, resource clearinghouse and links to useful educational websites.</p>		
<p><i>Planned Programming</i></p> <p>The Center will maintain a website that contains current information about programs, resource clearinghouse and links to useful educational websites.</p>	<p><i>Assessment Question for Center Performance Effectiveness</i></p> <p>Is the website an effective way to distribute information about programming?</p>	<p><i>Data to Collect</i></p> <p>Teacher, community and administrator's surveys</p>