

Western Upper Peninsula Center for Science, Mathematics and Environmental Education

UPDATE TO FIVE YEAR STRATEGIC PLAN INCORPORATING QUALITY INDICATORS

Year 5 for the five-year plan of 2004-05 to 2009-10

Performance Effectiveness Indicator for Leadership:

Centers assess needs, leverage resources, and promote collaboration in improving mathematics and science education

Identified Leadership Needs Based on a Current Comprehensive Needs Assessment:

- Need for partnership and collaboration to provide programming equitably to a large geographical region.
- Need for teachers and administrators to participate in statewide initiatives to improve math and science education.

Center Five Year Goals for LEADERSHIP:

- 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 PROGRAMMING YEAR 2008-09—LEADERSHIP

<p>Goal 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.</p>		
<p>List of planned programs for Year 2008-09:</p> <p>L1.1 Participate in professional development and leadership activities of the Michigan Mathematics and Science Centers Network.</p> <p>L.1.2 Participate on the Evaluation Committee of the Michigan Mathematics and Science Centers Network.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Does participation in the Michigan Mathematics and Science Centers Network influence programming in the Center's service area?</p> <p>1.2 Does participation in the Evaluation Committee allow the Michigan Mathematics and Science Centers Network to be more effective?</p>	<p>References for data gathering:</p> <p>1. 1 Document participation in the network activities.</p> <p>1.2. Meeting minutes of activities of the Evaluation Committee.</p>

<p>Goal 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.</p>		
<p>List of planned programs for Year 2008-09:</p> <p>L2.1. Collaborate with school districts, community organizations, local businesses, Michigan Technological University (MTU), and Finlandia University to coordinate teacher and student activities.</p> <p>L2.2. Maintain an email list-serve and website to provide teachers with information on professional development opportunities and student services.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>2.1 Does collaboration result in more student and teacher programs in the Center's service area?</p> <p>2.2 Does the email list-serve and website provide an effective way for teachers to receive information?</p>	<p>References for data gathering:</p> <p>2.1 Document programs that are result of collaborative efforts with other organizations.</p> <p>2.2 Survey teachers concerning email list-serve effectiveness. Keep track of website hits through a page counter.</p>

<p>Goal L3: The Center will provide leadership for schools in the CCISD and GOISD by participating in State Wide Initiatives to improve mathematics and</p>

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10

science education.		
<p>List of planned programs for Year 2008-09:</p> <p>L3.1 The Center will implement the activities of the Michigan Mathematics Leadership Academy (MMLA) in Center's service area.</p> <p>L3.2 The Center will implement the activities of the Michigan Science Leadership Academy (MSLA) in the Center's Service area.</p> <p>L3.3 The Center will implement the activities of the High School Math and Science Success (HSMASS) in the Center's Service area.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>3.1 Does the MMLA provide high quality professional development for teachers in Center's service area?</p> <p>3.2 Does the MSLA provide high quality professional development for teachers in Center's service area?</p> <p>3.3 Does the HSMASS provide high quality professional development for teachers in Center's service area?</p>	<p>References for data gathering:</p> <p>3.1 Collect workshop agendas and evaluations.</p> <p>3.2 Collect workshop agendas and evaluations.</p> <p>3.3 Collect workshop agendas and evaluations.</p>

<p>Goal L4: The Center will provide leadership in establishing partnerships and programs throughout the Michigan, Upper Peninsula and Great Lakes region.</p>		
<p>List of planned programs for Year 2008-09:</p> <p>L4.1 The Center will bring together schools and community organizations to conduct environmental stewardship projects and support their efforts.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>4.1 Will the Lake Superior Stewardship Initiative engage students in stewardship projects that have a meaningful impact on the Lake Superior Watershed?</p>	<p>References for data gathering:</p> <p>4.1 Document the impact of the Lake Superior Stewardship Initiative Stewardship projects on the ecosystem and communities in the Lake Superior Watershed.</p>

Performance Effectiveness Indicator for Professional Development:

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

Identified Professional Development Needs Based on a Current Comprehensive Needs Assessment:

- Need for professional development for teachers and administrators on how to implement the Michigan Merit Curriculum and new K-8 content expectations in daily instruction.

Center Five Year Goals for Professional Development:

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.

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10
FOCUS OF PROGRAMMING YEAR 2008-09—PROFESSIONAL DEVELOPMENT

<p>Goal PD1: The Center will provide high quality professional development opportunities that help teachers implement the state and national standards and model effective teaching.</p>		
<p>List of planned programs for Year 2008-09:</p> <p>PD1.1. Provide quality and sustained professional development on High School Reform and the Michigan Merit Exam</p> <p>PD1.2. Provide quality and sustained professional development on the K-8 Content Expectations in science and mathematics.</p> <p>PD1.3. Provide quality professional development to new teachers and their mentors.</p> <p>PD1.4. Provide quality professional development to teachers and administrators on the school improvement process.</p> <p>PD1.5 Provide quality professional development on the Lake Superior Watershed and community based education.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Does this professional development provide teachers with tools to implement high school content expectations and prepare students for the Michigan Merit Exam?</p> <p>1.2 Does this professional development provide teachers with the tools to implement the K-8 Science and Mathematics Content Expectations in their classrooms?</p> <p>1.3 Does this professional development help new teachers create a productive learning environment in their classrooms?</p> <p>1.4 Does this professional development help schools use the school improvement process to improve student achievement?</p> <p>1.5 Does this professional development help schools engage students in community-based projects that have an impact on their community and the Lake Superior Watershed?</p>	<p>References for data gathering:</p> <p>1.1 Workshop evaluations, teacher surveys, and MME data.</p> <p>1.2 Workshop evaluations, teacher surveys, and MEAP data.</p> <p>1.3 Workshop evaluation and mentor surveys.</p> <p>1.4 Workshop evaluation and school improvement plans.</p> <p>1.5 Pre-post evaluations of participating teachers and their students, project plans and reported outcomes.</p>

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10

<p>Goal PD2: The Center will partner with various departments at MTU to offer high quality professional development opportunities to teachers in the service area.</p>		
<p>List of planned programs for Year 2008-09:</p> <p>PD2.1 Provide quality and sustained professional development on mathematics content and practice through the <i>Teachers Inquiring Into Practice (TIIP) Teaching Algebra 1 to All</i> project.</p> <p>PD2.2 Develop and implement Educators Professional Development Institute Series (EPDIS) in Physical Science</p> <p>PD2.3 Develop and implement the Global Change Institute</p> <p>PD2.4 Develop and implement the Forest Resources and Environmental Science Institute.</p> <p>PD 2.5 Develop and implement the Future Fuels from Forests Institute.</p> <p>PD 2.6 Develop and implement the Great Lakes Maritime Transportation Institute.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>2.1 Does the <i>TIIP</i> project increase the content knowledge of the participating teachers and improve the teaching and learning of mathematics?</p> <p>2.2 Does EPDIS provide teachers with resources and strategies to engage students in real world application of the physics and chemistry content expectations?</p> <p>2.3 Does this institute provide teachers with resources and strategies to engage students in scientific research on climate change?</p> <p>2.4 Does this institute provide teachers with resources and strategies to engage students in scientific research on forest ecology?</p> <p>2.5 Does this institute provide teachers with resources and strategies to engage students in scientific research concerning alternate forms of energy?</p> <p>2.6 Does this institute provide teachers with resources and strategies to engage students in learning about the various aspects of maritime transportation?</p>	<p>References for data gathering:</p> <p>2.1 Pre and post -tests of the participating teachers' content knowledge and classroom observations of participating teachers.</p> <p>2.2 Pre and post -tests of the participating teachers' content knowledge and classroom observations of participating teachers.</p> <p>2.3 Workshop evaluations and examples of unit plans created by participating teachers.</p> <p>2.4 Workshop evaluations and examples of unit plans created by participating teachers.</p> <p>2.5 Workshop evaluations and examples of unit plans created by participating teachers.</p> <p>2.6 Workshop evaluations and examples of unit plans created by participating teachers.</p>

Performance Effectiveness Indicators for Student Services:

Students impacted (directly and indirectly) by Center programs demonstrate progress toward mathematics and science literacy

Students will elect to participate in mathematics and science opportunities in greater numbers

Identified Student Service Needs Based on a Current Comprehensive Needs Assessment:

- Need for student programming that provides real world examples and application of concepts and skills taught in the classroom.

Center Five Year Goals for Student Services:

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.

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10
FOCUS OF PROGRAMMING YEAR 2008-09—STUDENT SERVICES

<p>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.</p>		
<p>List of planned programs for Year 2008-09:</p> <p>SS1.1 Develop and implement the Western Upper Peninsula Science Fair for students in grades fourth through eighth.</p> <p>SS1.2 Work with local schools to development and implement science fairs in their own buildings.</p> <p>SS1.3 Coordinate and support FIRST LEGO League teams in the CCISD and GOISD.</p> <p>SS1.4 Coordinate and conduct forest, pond, limnological and winter ecology field trips for students and teachers at school forests, state parks, local wildlife areas and aboard MTU Research Vessel Agassiz.</p> <p>SS1.5 Develop and implement “We Can Make A Difference” Earth Day Program.</p> <p>SS1.6 Develop and implement TIVITZ mathematics program.</p> <p>SS1.7 Develop and implement an assembly program that addresses topics in math, science and environmental science.</p> <p>SS1.8 Develop and implement the MUSES program that focuses on careers in environmental sustainability and alternate energy.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Does the science fair develop understanding of the scientific research?</p> <p>1.2 Do the local science fairs develop understanding of the scientific research?</p> <p>1.3 Does FIRST LEGO League engage students in problem solving activities?</p> <p>1.4 Do field trips promote understanding of ecosystems, Lake Superior Watershed and promote environmental stewardship?</p> <p>1.5 Does the Earth Day program promote environmental stewardship?</p> <p>1.6 Does the TIVITZ program engage students in problem solving activities?</p> <p>1.7 Does the assembly program motivate students to pursue further study of topics in science and math?</p> <p>1.8 Does the MUSES program engage students in exploring careers in environmental science and sustainability?</p>	<p>References for data gathering:</p> <p>1.1 Interviews with students and judges and examples of student work.</p> <p>1.2 Interviews with students and examples of student work.</p> <p>1.3 Program evaluations given to students and coaches.</p> <p>1.4 Program evaluations given to students and teachers.</p> <p>1.5 Program evaluations and surveys given to students and teachers.</p> <p>1.6 Program evaluations and surveys given to students and teachers.</p> <p>1.7 Program evaluations and surveys given to students and teachers.</p> <p>1.8 Program evaluations and surveys given to students and teachers.</p>

Performance Effectiveness Indicator for Curriculum Support:

Districts will develop and implement aligned curricula in mathematics and science classrooms

Identified Curriculum Support Needs Based on a Current Comprehensive Needs Assessment:

- Need for assistance in implementing the Michigan Merit Curriculum and the new content expectations in daily instruction.
- Need to improve achievement for all students on MEAP and MME.

Center Five Year Goals for Curriculum Support:

CS1 The Center will cooperate with schools in the CCISD and GOISD to implementing their school improvement plans to improve 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.

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10
FOCUS OF PROGRAMMING YEAR 2008-09—CURRICULUM SUPPORT

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

List of planned programs for Year 2008-09:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CS1.1 Provide quality professional development to teachers and administrators on the school improvement process.	1.1 Does this professional development help schools use the school improvement process to improve student achievement?	1.1 Workshop evaluation and school improvement plans.

Goal 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.

List of planned programs for Year 2008-09:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CS2.1 Provide quality and sustained professional development on High School Reform and the Michigan Merit Exam.	2.1 Does this professional development provide teachers with the tools to implement the high school content expectations and prepare students for the Michigan Merit Exam?	2.1 Workshop evaluations and teacher surveys, and MME data.
CS2.2 Provide quality and sustained professional development on the K-8 Content Expectations in Science and Mathematics.	2.2 Does this professional Development provide teachers with the tools to implement the K-8 Content Expectations in Science and Mathematics?	2.2 Workshop evaluations and teacher surveys, and MEAP data.

Performance Effectiveness Indicator for Community Involvement:

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

Identified Community Involvement Needs Based on a Current Comprehensive Needs Assessment:

- Need for community awareness of the Western UP Center's programs and value to schools in the service area.

Center Five Year Goals for Community Involvement:

C11 The Center will develop and implement programs in science and mathematics education for the local community.

C12 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.

C13 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.

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10
FOCUS OF PROGRAMMING YEAR 2008-09—COMMUNITY INVOLVEMENT

Goal CI1: The Center will develop and implement programs in science and mathematics education for the local community.		
List of planned programs for Year 2008-09:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CI 1.1 Develop and conduct Family Science/ Engineering and Math Nights to be held at elementary schools in the CCISD and GOISD.	1.1 Do family nights encourage parent involvement in their children's education?	1.1 Parent surveys
CI 1.2 Develop and conduct the Science Festival for students, parents and younger siblings at the Western UP Science Fair.	1.2 Does the science festival encourage parent involvement in their children's education?	1.2 Parent surveys
CI 1.3 Develop and conduct Great Lakes Environmental Stewardship and Sustainability workshops such as Family Outdoor Weekend and Scientific Excursions on the Agassiz.	1.3 Do the workshops give the participants a better understanding of Great Lakes Watershed, stewardship and sustainability?	1.3 Participant surveys
Goal CI2: 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.		
List of planned programs for Year 2008-09:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CI 2.1 The Center will bring together schools and community organizations to conduct environmental stewardship projects and support their efforts.	2.1 Will the Lake Superior Stewardship Initiative engage students in stewardship projects that have a meaningful impact on the Lake Superior Watershed?	2.1 Document the impact of the Lake Superior Stewardship Initiative stewardship projects on the ecosystem and communities in the Lake Superior Watershed.
Goal CI 3: 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.		
List of planned programs for Year 2008-09:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CI 3.1 The Center will maintain and utilize email list-serves of teachers and administrators to provide information about programs offered by the Center.	3.1 Are the email list-serves an effective way to distribute information about programming?	3.1 Teacher and administrator's surveys.
CI 3.2 The Center will maintain a website that contains current information about programs, resource clearinghouse and links to useful educational websites.	3.2 Is the website an effective way to distribute information about programming?	3.2 Teacher, community and administrator's surveys

Performance Effectiveness Indicator for Resource Clearinghouse:

Resources provided by Centers are used to support best practices in mathematics/science education

Identified Resource Needs Based on a Current Comprehensive Needs Assessment:

- Need for an effective way to get information out about the Western UP Center's programs to teachers, administrators, students, parents and community members.

Center Five Year Goals for Resource Clearinghouse:

RC1 The Center will provide teacher resources that support standards based instruction and authentic assessment.

RC2 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.

RC3 The Center will maintain a website that contains current information about center programs, resource clearinghouse and links to useful educational websites.

Western UP Center UPDATED FIVE YEAR STRATEGIC PLAN 2004-05 to 2009-10
FOCUS OF PROGRAMMING YEAR 2008-09—RESOURCE CLEARINGHOUSE

Goal RC1: The Center will provide teacher resources that support standards based instruction and authentic assessment.		
List of planned programs for Year 2008-09: RC 1.1 Maintain a lending library of standards-based activity guides, children literature, activity kits and equipment.	Assessment Questions for Center Performance Effectiveness 1.1 Do teachers from all districts in the service area use the lending library?	References for data gathering: 1.1 Records of what materials and equipment are checked out.
Goal RC2: 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.		
List of planned programs for Year 2008-09: RC 2.1 The Center will maintain and utilize email list-serves of teachers and administrators to provide information about programs offered by the Center.	Assessment Questions for Center Performance Effectiveness 2.1 Are the email list-serves an effective way to distribute information about programming?	References for data gathering: 2.1 Teacher and administrator's surveys.
Goal RC3: The Center will maintain a website that contains current information about center programs, resource clearinghouse and links to useful educational websites.		
List of planned programs for Year 2008-09j: RC 3.1 The Center will maintain a website that contains current information about programs, resource clearinghouse and links to useful educational websites.	Assessment Questions for Center Performance Effectiveness 3.1 Is the website an effective way to distribute information about programming?	References for data gathering: 3.1 Teacher, community and administrator's surveys