

Western UP Center for Science, Mathematics and Environmental Education

FIVE YEAR STRATEGIC PLAN INCORPORATING QUALITY INDICATORS 2014-2015 to 2019-2020

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:

- There is a need for the Center to collaborate with schools, community organizations, universities and statewide networks to develop high quality teacher and student programs and leverage resources to fund these programs.
- There is a need for the Center to provide leadership in helping school districts to develop relationships with resource organizations in their community to enhance educational programs and address needs in their community.

Center Five Year Goals for LEADERSHIP:

- L1. The Center will collaborate with schools, community organizations, state and federal agencies, Michigan Technological University, Michigan Universities and Colleges to develop and implement high quality teacher and student programs and leverage resources to fund these programs.
- L2. The Center will provide assistance to schools to develop relationships with community organizations to support their educational programs.
- L3. The Center will participate in the initiatives of the Michigan Math and Science Center Network and participate in regional, state and national conferences for professional growth and to contribute to the profession.

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FOCUS OF PROGRAMMING YEAR 2 (2015-2016)—LEADERSHIP

<p>L1. The Center will collaborate with schools, community organizations, state and federal agencies, Michigan Technological University, Michigan Universities and Colleges to develop and implement high quality teacher and student programs and leverage resources to fund these programs.</p>		
<p>List of planned programs for Year 2:</p> <p>L1.1 Collaborate with the Copper Country ISD, Gogebic Ontonagon ISD, community organizations, and Michigan Tech to coordinate teacher and student programs.</p> <p>L1.2 Collaborate with the Copper Country ISD, Gogebic Ontonagon ISD, community organizations, businesses, and Michigan Tech to pursue funding and resources for teacher and student programs.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Does collaboration result in more student and teacher programs in the Center’s service area?</p> <p>1.2 Does collaboration result in more funding for student and teacher programs in the Center’s service area?</p>	<p>References for data gathering:</p> <p>1.1 Document programs that are a result of collaborative efforts with other organizations.</p> <p>1.2 Document programs that are result of collaborative efforts to write grants or pursue program funding.</p>
<p>L2. The Center will provide assistance to schools to develop relationships with community organizations to support their educational programs.</p>		
<p>List of planned programs for Year 2:</p> <p>L2.1. Provide assistance to Lake Superior Stewardship Initiative (LSSI) school-community teams to develop community partnerships for stewardship projects in their community</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>2.1. Do community partnerships help schools engage students in stewardship projects in their community?</p>	<p>References for data gathering:</p> <p>2.1. Document school team projects through LSSI and the community partners that assisted with the projects.</p>

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<p>L3. The Center will participate in initiatives of the Michigan Math and Science Center Network and participate in regional, state and national conferences for professional growth and to contribute to the profession.</p>		
<p>List of planned programs for Year 2:</p> <p>L3.1 Implement the professional learning activities of the Michigan Mathematics Science Centers Network in the Center’s service area.</p> <p>L3.2 Facilitate the participation of community leaders, business leaders and educators in the activities of the Superior Hub of the Michigan STEM Partnership.</p> <p>L3.3 Support the participation of teachers and community partners in the regional place based education conference hosted by Great Lakes Stewardship Initiative (GLSI).</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>3.1 Do these programs provide high quality professional development for teachers?</p> <p>3.2 Does the Superior Hub promote STEM learning and careers with students, parents and community members?</p> <p>3.3 Does participation in the GLSI conference provide teachers with strategies to implement stewardship work with their students</p>	<p>References for data gathering:</p> <p>3.1 Workshop agendas and evaluations.</p> <p>3.2 Activity agendas, sign in sheets and Pre-Post surveys of participants.</p> <p>3.3 Conference agendas, teacher surveys.</p>

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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:

- There is a need for supporting teachers in the development and implementation of project based learning.
- There is a need for supporting teachers to develop an instructional and assessment plans that leads to the mastery of current Michigan Content Standards and engages students in relevant high quality learning experiences.
- There is need for teachers to collaborate on a regular basis concerning instructional and assessment strategies and teaching resources.

Center Five Year Goals for Professional Development:

PD1 The Center will provide high quality professional development opportunities that help teachers implement state and national standards and model effective teaching and assessment strategies for all learners.

PD2 The Center will provide opportunities for teachers to participate in professional learning communities to explore effective teaching resources and develop strategies to engage students in relevant high quality learning experiences.

PD3 The Center will provide professional development and support teachers as they design and implement project based learning.

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FOCUS OF PROGRAMMING YEAR 2 (2015-2016)—PROFESSIONAL DEVELOPMENT

<p>PD1 The Center will provide high quality professional development opportunities that help teachers implement state and national standards and model effective teaching and assessment strategies for all learners.</p>		
<p>List of planned programs for Year 2:</p> <p>PD1.1 Provide quality sustained professional development on mathematics content and practices in CCSS through professional learning community (PLC) activities.</p> <p>PD1.2 Provide quality sustained professional learning opportunities for new teachers and their mentors.</p> <p>PD1.3 Provide quality sustained professional learning for science teachers on NGSS Standards.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Do PLC activities increase the content knowledge of the participating teachers and improve the teaching and learning of mathematics?</p> <p>1.2 Does this program provide new teachers with the support they need to be successful in the first three years of teaching?</p> <p>1.3 Does this professional development increase the knowledge of the science content in NGSS?</p>	<p>References for data gathering:</p> <p>1.1 Pre and post -surveys of the participating teachers.</p> <p>1.2 Workshop agendas and surveys.</p> <p>1.3 Workshop agendas and surveys</p>

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<p>PD2 The Center will provide opportunities for teachers to participate in professional learning communities to explore effective teaching resources and develop strategies to engage students in relevant high quality learning experiences.</p>		
<p>List of planned programs for Year 2:</p> <p>PD2.1 Build and facilitate professional learning communities for teachers involve in LSSI to share teaching resources and instructional strategies.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>2.1 Do professional learning communities help teachers grow professionally and provide an opportunity for teachers to network?</p>	<p>References for data gathering:</p> <p>2.1 Surveys of teacher participants and examples of student work.</p>

<p>PD3 The Center will provide professional development and support teachers as they design and implement project based learning.</p>		
<p>List of planned programs for Year 2:</p> <p>PD3.1 Provide quality professional learning on the Lake Superior Watershed and project based education.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>3.1 Does this professional learning help schools engage students in project-based learning that will have an impact on their community and the Lake Superior Watershed?</p>	<p>References for data gathering:</p> <p>3.1 Workshop agendas and evaluations, projects plans, reported outcomes, and documentations of community partnerships.</p>

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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:

- There is a need to engage students in relevant learning experiences that give them the tools to be productive citizens in their community and promote careers in science, technology, engineering and math.
- There is a need to engage students in learning experiences that promote higher order thinking and allow them to develop real world connections of science, technology, engineering and math concepts.

Center Five Year Goals for Student Services:

SS1 The Center will provide support to schools to engage students in project based learning to address a stewardship need in their community.

SS2 The Center will provide programs that engage students in activities that promote higher order thinking and develop real world connections of science, technology, engineering and mathematics concepts.

SS3 The Center will provide programs that promote careers in science, technology, engineering and mathematics.

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FOCUS OF PROGRAMMING YEAR 2 (2015-2016)—STUDENT SERVICES

SS1 The Center will provide support to schools to engage students in project based learning to address a stewardship need in their community.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
SS1.1 Provide financial and logistical support to LSSI school teams to implement stewardship projects in their community	1.1 Does involvement in stewardship projects develop productive citizens and stewards of the Great Lakes?	1.1Pre-post surveys of students, and report of project outcomes.

SS2 The Center will provide programs that engage students in activities that promote higher order thinking and develop real world connections of science, technology, engineering and mathematics concepts.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
SS2.1 Develop and implement the Lake Superior Celebration and Water Festival.	2.1 Does the celebration and festival promote stewardship attitudes and develop an understanding of the Great Lakes watershed?	2.1 Pre-post surveys of students, teachers and examples of student work.
SS2.2 Develop and implement ecology field trips for students and teachers at school forests, state parks and local wildlife areas.	2.2 Do field trips promote the understanding of ecosystems in the Lake Superior Watershed and promote environmental stewardship?	2.2 Student and Teacher Surveys
SS2.3 Develop and implement afterschool and spring break STEM classes for students.	2.3 Do science classes promote the understanding of STEM concepts?	2.3 Student surveys
SS2.4 Develop and implement Western UP STEM Fair and Festival.	2.4 Does the fair and festival promote understanding of STEM concepts, research and career opportunities?	2.4 Student and teacher surveys
SS2.5 Coordinate the Global Watershed Project, which places graduate fellows with teachers to engage students in scientific research.	2.5 Does the Global Watershed Project provide students and teachers with the tools to conduct scientific research?	2.5 Unit plans and examples of student work. Pre and post student and teacher Surveys

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SS3 The Center will provide programs that promote careers in science, technology, engineering and math.		
<p>List of planned programs for Year 2:</p> <p>SS3.1 Develop and implement Western UP STEM Fair and Festival.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>3.1 Does the fair and festival promote understanding of STEM concepts, research and career opportunities?</p>	<p>References for data gathering:</p> <p>3.1 Student and teacher surveys</p>

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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:

- There is a need for school districts to develop an instructional plan (scope and sequence) that leads to the mastery of current Michigan Content Standards and promote student achievement.

Center Five Year Goals for Curriculum Support:

CS1 The Center will work through the school improvement process to support districts as they develop an instructional plan that allows all students to master the Michigan Content Standards.

List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CS1.1 Staff of the Center will work with school improvement teams to incorporate the programs and services of the Center into school improvement plans.	1.1 Do school improvement teams view the programs and services of the Center as effective strategies to meet their school improvement goals?	1.1 Copies of school improvements plan

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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:

- There is a need to provide opportunities for families to be involved in relevant learning experiences that strengthen the family unit as an important teaching and learning resource.
- There is a need for schools and community organizations to work together to address community needs and promote stewardship of the Great Lakes watershed.

Center Five Year Goals for Community Involvement:

CI1 The Center will provide family programs that engage all members in relevant learning experiences.

CI2 The Center will promote school-community partnerships to address community needs and stewardship of the Great Lakes Watershed.

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FOCUS OF PROGRAMMING YEAR 2 (2015-2016)—COMMUNITY INVOLVEMENT

<p>CI1 The Center will provide family programs that engage all members in relevant learning experiences.</p>		
<p>List of planned programs for Year 2:</p> <p>CI 1.1 Develop and conduct Family Science/ Engineering and Math Nights to be held at elementary schools.</p> <p>CI 1.2 Develop and conduct the Water Festival and the Lake Superior Celebration for students, teachers and parents.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Do family nights encourage parent involvement in their children’s education?</p> <p>1.2 Does the celebration and festival promote stewardship attitudes and develop an understanding of the Great Lakes watershed?</p>	<p>References for data gathering:</p> <p>1.1 Program agendas and parent surveys.</p> <p>1.2 Surveys of students, parents, and teachers and examples of student work.</p>

<p>CI2 The Center will promote school community partnerships to address community needs and stewardship of the Great Lakes Watershed.</p>		
<p>List of planned programs for Year 2:</p> <p>CI 2.1 Bring together schools and community organizations through LSSI to conduct environmental stewardship projects and support their efforts.</p> <p>CI 2.2 Develop and implement the Green Film Festival.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>2.1 Will the LSSI engage students in stewardship projects that have a meaningful impact on their community?</p> <p>2.2 Does the film festival promote stewardship attitudes and an understanding of the issues facing the Great Lakes watershed?</p>	<p>References for data gathering:</p> <p>2.1 Document the impact of the LSSI stewardship projects on the ecosystem and communities in the Lake Superior Watershed.</p> <p>2.2 Participant surveys.</p>

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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:

- There is a need for effective communication plan to inform educators, communities and families of the programs offered by the Center and build support for Center programs.
- There is need for educators to find quality teaching resources to enhance the learning experience for students.

Center Five Year Goals for Resource Clearinghouse:

RC1 The Center will use multiple communication means to promote educational programs and services.

RC2 The Center will provide high quality educational resources to schools through professional development and a lending library.

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FOCUS OF PROGRAMMING YEAR 2 (2015-2016)—RESOURCE CLEARINGHOUSE

RC1 The Center will use multiple communication means to promote educational programs and services.		
<p>List of planned programs for Year 2:</p> <p>RC1.1 Develop and implement a communication plan to effectively promote the programs of the Center.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>1.1 Are teachers, administrators, students, parents and community members more aware of the Center’s programs?</p>	<p>References for data gathering:</p> <p>1.1 Surveys of stakeholders in the service area.</p>

RC2 The Center will provide high quality educational resources to schools through professional development and a lending library.		
<p>List of planned programs for Year 2:</p> <p>RC 2.1 Maintain a lending library of standards-based activity guides, children literature, activity kits and equipment.</p> <p>RC 2.2 Provide teachers with high quality teaching resources at professional development programs.</p>	<p>Assessment Questions for Center Performance Effectiveness</p> <p>2.1 What resources are used by educators?</p> <p>2.2 Do teachers use these materials in their instruction?</p>	<p>References for data gathering:</p> <p>2.1 Records of what materials are checked out.</p> <p>2.2 Teacher surveys.</p>