

Lapeer County Mathematics and Science Center (LCMSC)

UPDATE TO FIVE YEAR STRATEGIC PLAN INCORPORATING QUALITY INDICATORS

Year 2 for the five year plan 2012-2013 up to 2017-2018

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:

The Lapeer County School Development Resource Team (SDRT) plans for, reviews, and discusses Math/Science Center programs and issues at monthly meetings. This group is comprised of local administrators who are responsible for curriculum, instruction and school improvement. In addition, a Math and Science Advisory Committee has been developed in 2013/2014 SY and collaborates on plans and student activities. This group is comprised of local district representatives, LC K-12 Science Leadership teams and community members.

- Leverage the resources of the Center to bring needed programming and materials to Lapeer County.
- Ensure that districts and teachers have current and accurate information relating to math and science.

Center Five Year Goals for LEADERSHIP:

- L1. Actively participate in local, state, and national STEM related organizations to provide information and resources to local districts.
- L2. Increase local math and science leadership to include representation from all grade levels and buildings in Lapeer County.

*insert as many goals as appropriate

LCMSC FIVE YEAR STRATEGIC PLAN 2012-2013 up to 2017-2018

FOCUS OF PROGRAMMING YEAR 2—LEADERSHIP

Goal L1. Actively participate in local, state, and national STEM related organizations.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
L1.1 Director will continue active involvement in professional organizations to provide information to local districts. Organizations include; the Michigan Math Science Centers Network, St. Clair Hub of the MI STEM Partnership, the Thumb and Knuckle Science Consultants, NSTA, NCTM, MSTA, and MCTM, etc.	1. Which state and national groups are you gathering information from and how?	1. Membership information 2. Meeting sign-in sheets and agendas
L1.2 Act as a conduit for information and resources regarding the math and science between outside organizations and local districts.	1. What types of information/resources are being gathered and shared? 2. Are districts benefiting from director involvement?	1. Meeting sign-in sheets and agendas 2. Flyers and examples of opportunities made available as a result of involvement.

Goal L2. Increase local math and science leadership to include representation from all grade levels and buildings in Lapeer County.		
List of planned programs for Year 2 :	Assessment Questions for Center Performance Effectiveness	References for data gathering:
L2.1 Regular meetings with the K-12 LC Science Leaders Team to inform and prepare for the NGSS.	1. How often do they meet? 2. What is accomplished at these meetings?	1. Meeting sign-in sheets 2. Meeting agendas.
L2.2 Continue work with county-wide HS Science Leadership Team.	1. Are all buildings represented throughout the county?	1. Meeting sign-in sheets.
L2.3 Continue to establish a county-wide Math Leadership Team	2. Are all buildings represented throughout the county?	1. Meeting sign-in sheets.
L2.4 Use leadership teams as Points of Contact to distribute Science Matters and other pertinent information to teachers.	1. Are all teachers receiving the Science Matters e-blasts? 2. Are teachers adequately informed of changes and opportunities?	1. Science Matters website POC list. 2. E-mail records.

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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:

- Support district transition to meet the requirements of the CCSS and NGSS.
- Improve student assessment scores in math and science.

Center Five Year Goals for Professional Development:

PD1 Provide professional development opportunities to support the transition to the CCSS in math and the NGSS in science.

PD2 Increase professional development based on needs determined by assessment results.

PD3 Opportunities for local teachers to participate other professional development activities that will increase their content knowledge and/or pedagogy.

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FOCUS OF PROGRAMMING YEAR 2—PROFESSIONAL DEVELOPMENT

Goal PD1. Provide professional development opportunities to support the transition to the CCSS in math and the NGSS in science.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
PD1.1 Continue to offer professional development and support services related to CCSS transition based on district requests.	<ol style="list-style-type: none"> Which districts have participated in CCSS transition PD? Where are they in this transition process? 	<ol style="list-style-type: none"> Sign in sheets SDRT and leadership teams consultation
PD1.2 Increase awareness of the NGSS	<ol style="list-style-type: none"> Which districts have participated in NGSS PD? 	<ol style="list-style-type: none"> Sign in sheets
PD1.3 Math Practices PD offered through our partnership arrangements with GISD. Including: <ul style="list-style-type: none"> ➤ Introduction to the Mathematics MAISA Units ➤ Key Instructional Shifts of the CCSS for Mathematics ➤ Common Sense for the Common Core - Math 	<ol style="list-style-type: none"> Which teachers are attending? Have they effectively made this shift? 	<ol style="list-style-type: none"> Sign in sheets SDRT and leadership teams consultation
PD1.4 Increase literacy connections to science through ELA CCSS Reading and Writing for Science offered through our partnership with GISD. PD includes: <ul style="list-style-type: none"> ➤ CCSS Literacy in Science ➤ Cross curricular Literacy Leadership Collaborative ➤ Cross curricular Computation Leadership Collaborative 	<ol style="list-style-type: none"> Which teachers are attending? Have they effectively made this shift? 	<ol style="list-style-type: none"> Sign in sheets SDRT and leadership teams consultation
PD1.5 Improve teacher knowledge of technology and engineering in science classrooms via LEGO Robotics PD.	<ol style="list-style-type: none"> Which districts are participating? At what level of involvement are districts committing to the effort? 	<ol style="list-style-type: none"> Sign in sheets Leadership team consultation

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Goal PD2. Increase professional development based on needs determined by assessment results.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
PD2.2 Use assessment data to tailor professional development as requested by local districts.	<ol style="list-style-type: none"> 1. What assessment data is being used? 2. What districts are using this service? 3. Has it been effective? 	<ol style="list-style-type: none"> 1. SDRT 2. Sign in sheets 3. Data from standardized assessments

Goal PD3. Opportunities for local teachers to participate other professional development activities that will increase their content knowledge and/or pedagogy.		
List of planned programs for Year 1:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
PD3.1 Continue the partnership with GISD for consultant services to meet the professional development needs within the county.	<ol style="list-style-type: none"> 1. How are GISD consultants supporting Lapeer County? 2. How often are GISD consultants being used in Lapeer County? 	<ol style="list-style-type: none"> 1. sign in sheets 2. data collected from consultants and SDRT
PD3.2 Continue to offer professional development opportunities made available through MMSCN, such as SaM3, Project PRIME, etc.	<ol style="list-style-type: none"> 1. Are teachers participating in these opportunities? 2. Are teachers benefiting from these opportunities? 	<ol style="list-style-type: none"> 3. Assessment data 4. PD survey results Sign in sheets

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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:

- Increase awareness of STEM related career opportunities as a means to encourage students to participate in the study of STEM related disciplines.
- Provide real-world opportunities for students to participate in hands on STEM related activities.

Center Five Year Goals for Student Services:

SS1 Promote the use of Ligon Outdoor Center and Seven Ponds Nature Center as a means to teach science expectations in a hands-on, real-world setting.

SS2 Promote awareness of STEM educational and career opportunities for students.

SS3 Encourage participation in extracurricular STEM related competitions and clubs.

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FOCUS OF PROGRAMMING YEAR 2—STUDENT SERVICES

Goal SS1. Promote the use of Ligon Outdoor Center as a means to teach science expectations in a hands-on, real-world setting.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
SS1.1 Work with districts/teachers to promote the use of Ligon Outdoor Center and Seven Ponds Nature Center	1. Are administrators and teachers aware of opportunities that exist for engaging teaching activities at Ligon Outdoor Center and Seven Ponds Nature Center	1. Principal and teacher participation survey data 2. Analysis of assessment data 3. Transportation grant use numbers
SS1.2 Offer transportation reimbursement to districts to increase classroom/student use of Ligon Outdoor Center and/or Seven Ponds Nature Center	1. How many transportation grants are being used? 2. Which districts are making use of the transportation grants available to them?	
SS1.3 Implement outdoor education programming at Ligon Outdoor Center/ Seven Ponds Nature Center to address the current teaching standards.	1. How often are programs being used? 2. Are students learning the stated objectives of the program?	

Goal SS2. Promote awareness of STEM educational and career opportunities for students.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
SS2.1 Work with districts/teachers to promote the Family Engineering Night (FEN) Events in each local school district.	1. Are lead teachers in each district willing and supported throughout event preparation and implementation? 2. How effective is this program for encouraging students to pursue further education in the STEM fields?	1. Principal and teacher survey data 2. Student/teachers participation and programming data 3. Student surveys 4. Attendance sign-in sheets
SS2.2 Encourage local partnerships with engineering educators and professionals to add value to the FEN events.	1. Is the program enhanced through partnerships?	
SS2.3 Host Summer Camp opportunities for county-wide students to promote STEM awareness		

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Goal SS3. Encourage participation in extracurricular STEM related competitions and clubs.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
SS3.1 Expand participation in local and regional Science Fair Activities and Science Olympiad.	1. Which schools are participating?	1. SDRT and leadership team advisory
SS3.2 Encourage creation of middle school LEGO robotics teams and county-wide competitions.	1. Which schools are participating?	

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:

- Using data to improve student learning.
- Collaboration with colleagues to learn from one another.
- Knowledge of curricular and assessment changes resulting from the adoption of new standards.
- Integration of engineering and technology into science classes.

Center Five Year Goals for Curriculum Support:

CS1 Provide support for continuous process of aligning curriculum and instruction to improve student learning of the standards.

CS2 Use state and local data to encourage teacher collaboration.

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FOCUS OF PROGRAMMING YEAR 2—CURRICULUM SUPPORT

Goal CS1. Provide support for continuous process of aligning curriculum and instruction to improve student learning of the standards.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CS1.1 Assist districts with aligning new science state content expectations NGSS to local curriculum.	<ol style="list-style-type: none"> Are teachers aware of changes in curriculum resulting from NGSS? Which teachers are participating? 	<ol style="list-style-type: none"> SDRT meeting attendance and guidance E-mail communication records Sign in sheets from workshops
CS1.2 Assist districts with ongoing alignment of math state content expectations CCSS-M to local curriculum and the SBAC.	<ol style="list-style-type: none"> Are teachers/districts shifting practice? Are schools prepared for the SBAC? 	<ol style="list-style-type: none"> SDRT meeting attendance and guidance E-mail communication records Sign in sheets from workshops
CS1.3 Make use of our curriculum consultant partnership to address identified needs.	<ol style="list-style-type: none"> What are district needs? How has this partnership addressed identified needs? 	<ol style="list-style-type: none"> SDRT Sign in sheets Data from standardized assessments

Goal CS2. Use state and local data to encourage teacher collaboration.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CS2.1 Assist district with their analysis of MEAP and MME	<ol style="list-style-type: none"> Which administrators are using Pearson Inform to analysis MEAP/MME data? Are districts finding the information they need to make good assessment decisions? 	<ol style="list-style-type: none"> Professional development attendance sheets Administrator surveys Districts reports shared
CS2.1 Assist districts with school improvement goals that will affect math and science curriculum and instructions to strengthen MEAP scores.	<ol style="list-style-type: none"> What are local school improvement goals in math and science? Which areas of math and science need attention? 	<ol style="list-style-type: none"> School Improvement documents MEAP/MME data Common assessments
CS2.2 Assist districts in creation and use of common assessments and data analysis for continuous school improvement.	<ol style="list-style-type: none"> Are teachers using the assessment system properly? Which areas need improvement? 	<ol style="list-style-type: none"> Assessment documents created Common assessment data analysis Correlation of common assessment data to MEAP/MME Moodle Assessment training and usage logs

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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:

- Increase community knowledge of and support for math and science programming.

Center Five Year Goals for Community Involvement:

CI1 Seek community partnerships to leverage the resources of the Center.

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FOCUS OF PROGRAMMING YEAR 2—COMMUNITY INVOLVEMENT

Goal CI1. Seek community partnerships to leverage the resources of the Center.		
List of planned programs for Year 2:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
CI1.1 Center director or consultant will actively participate in groups within the community such as; Flint River Watershed GREEN Advisory and the St. Clair Hub of the MI STEM Partnership.	<ol style="list-style-type: none"> 1. What value has been added to the Center as a result of director involvement? 	<ol style="list-style-type: none"> 1. Professional development attendance 2. Additional resources and materials 3. Records of community involvement in math/science functions.
CI1.2 Center Director will lead M&S Advisory Committee comprised of local educators, administrators, community members and business owners to discuss effective use of funds for student related activities.	<ol style="list-style-type: none"> 1. Has the meetings been well attended? 2. What student related projects have grown due to the committee? 	<ol style="list-style-type: none"> 1. Sign in sheets 2. Project data collected and shared 3. Meeting minutes
CI1.3 Make use of partnerships with local granting organizations, such as Lapeer Community Foundation, and Workforce Training and Development to increase LEGO Robotics and FIRST Robotics use throughout the county.	<ol style="list-style-type: none"> 1. Which districts are participating? 2. Have funding needs been met? 	<ol style="list-style-type: none"> 1. SDRT 2. PD Sign in sheets 3. District meetings
CI1.4 Utilize partnerships with engineering student, educators, and professionals to encourage more student participation in STEM fields through Family Engineering Events.	<ol style="list-style-type: none"> 1. Are lead teachers in each district willing and supported throughout event preparation and implementation? 2. How effective is this program for encouraging students to pursue further education in the STEM fields? 	<ol style="list-style-type: none"> 1. Principal and teacher survey data 2. Student/teachers participation and programming data 3. Student surveys 4. Attendance sign-in sheets

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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:

- Increase resources for inquiry-based and real-world instructional materials
- Increase resources for the use of computer as a tool and resource for teaching and learning
- Increase knowledge of website for resource clearinghouse

Center Five Year Goals for Resource Clearinghouse:

RC1 Provide teachers with materials, new technology, and skills they need to implement innovative, best practice, real-world, inquiry-based science and mathematics instruction at all grade levels.

RC2 Promote Center Moodle website, materials, and utilize the Internet and other technologies as an informational resource.

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Goal RC 1: Provide teachers with materials, new technologies, and skills they need to implement innovative, best practice, real-world, inquiry-based science and mathematics instruction at all grade levels.

List of planned programs for Year 5:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
<p>RC1.1 Seek funding for new materials that incorporate inquiry-based and real world activities</p> <p>RC1.2 Provide technology resources for teachers</p> <ul style="list-style-type: none"> • Graphing Calculators • “Scope on a rope” small hand held microscopes <p>RC1.3 Provide training for materials available in Center’s resource clearinghouse</p> <ul style="list-style-type: none"> • Star Lab <p>RC1.4 Incorporate use of collaborative programs such as Google Docs, iGoogle, Adobe Connect</p> <p>RC1.5 Improve formative assessment practice through the use of technology such as CPS “clickers”, assessment software, and item banks</p>	<p>RC1.1</p> <ul style="list-style-type: none"> • How many resources were used to find funding for new materials? <p>RC1.2</p> <ul style="list-style-type: none"> • How many teachers have used the Center’s technology resources? • How many teachers attended professional development for technology resources? <p>RC1.3</p> <ul style="list-style-type: none"> • What materials or needs have been identified by districts CNA’s? • How many teachers attended professional developments? <p>RC1.4</p> <ul style="list-style-type: none"> • Are teachers collaborating online? • Do teachers find the tools useful? <p>RC1.5</p> <ul style="list-style-type: none"> • Are teachers formatively assessing their students? • Are teachers using data to improve student achievement? • Are teachers comfortable using the new technology? 	<p>RC1.1</p> <ul style="list-style-type: none"> • Budget data <p>RC1.2</p> <ul style="list-style-type: none"> • Analysis from data from check out log • Teacher phone calls to Center • Professional Development attendance records <p>RC1.3</p> <ul style="list-style-type: none"> • Professional Development attendance records • Analysis of districts CNA’s <p>RC1.4</p> <ul style="list-style-type: none"> • Products created collaboratively • Teacher feedback • Online attendance <p>RC1.5</p> <ul style="list-style-type: none"> • Assessments produced • Student performance improvement via teacher feedback/work sharing • Teacher survey

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Goal RC 2: Promote Center website, materials, and utilize the Internet and other technologies as an informational resource		
List of planned programs for Year 5:	Assessment Questions for Center Performance Effectiveness	References for data gathering:
<p>RC2.1 Maintain and promote an up-to-date web site</p> <ul style="list-style-type: none"> • Materials for Loan • Professional Development • Staff information • Documents • Website Links <p>RC2.2 Market an online brochure to promote Center, Moodle website, and materials available for loan</p>	<p>RC2.1</p> <ul style="list-style-type: none"> • Are teachers aware of Center website? • Do teachers use Center website as a resource for information? <p>RC2.2</p> <ul style="list-style-type: none"> • Are more teachers requesting to check out materials? • Which buildings in LCISD are not taking advantage of the resources clearinghouse? 	<p>RC2.1</p> <ul style="list-style-type: none"> • Data on number of hits • Administration and Teacher surveys <p>RC2.2</p> <ul style="list-style-type: none"> • Data from check out log