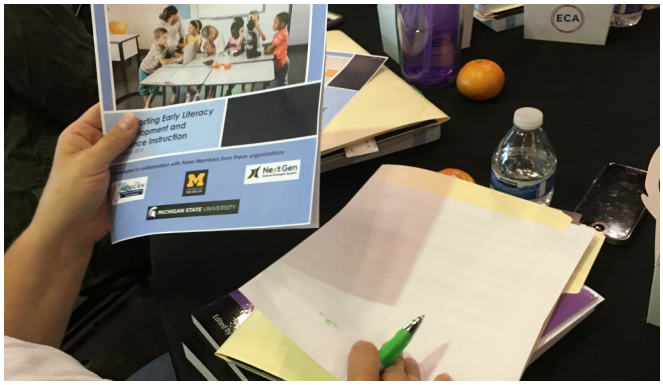
MICHIGAN Mathematics and Science Centers Network

September Newsletter

Michigan Math and Science Centers Network Partners with the National Science Teachers Association

NGSS INSTITUTE COMES TO DETROIT

On August 8, 2016, over 300 teachers from across the country traveled to the Michigan Science Center in Detroit for the NSTA NGSS Insitute. Only the fourth institute of its kind, and the first in Michigan, the full-day professional learning experience offered nationally-recognized facilitators in several sessions. The day began with a full group overview of the NGSS followed by break out sessions. elementary teachers, almost 100 strong, focused on driving literacy through science. The secondary teachers were grouped by content area and each group was able to focus on a set of science standards, exploring them through investigations and discussion. The 75 science education leaders, all from Michigan, learned more about working with school administrators as they support their teachers' implementation of the new science standards.



MI-SCI PLAN

As part of the TESLA project, the Michigan Mathematics and Science Centers Network has developed introductory professional learning experiences for science teachers K-12 on the new Michigan Science Standards. These fully developed workshops can be found at MISCIPLAN.com and are free for download.

MICHIGAN Mathematics and Science Centers Network

GRACE PROGRAM wins international GIS Achievement award from ESRI

Watch the short video for details at: http://resourcecenters2015.videohall.com/posters/555.

The GRACE team representatives are congratulated by ESRI founder and President, Jack Dangermond.

Organizations That Use GIS to Improve Our World

By embracing geographic information system (GIS) technology, these organizations have used GIS to improve our world—and set new precedents throughout the GIS community.

The SAG Award ceremony is held at the annual Esri International User Conference and presided over by Jack Dangermond, the president and founder of Esri. During the reception, winners are invited to have their pictures taken with Jack.

Recipients of the Special Achievement in GIS award are submitted by Esri staff from thousands of organizations worldwide, then personally reviewed and selected by Jack.

GRACE Program Overview

GRACE (GIS/T Resources and Applications for Career Education) is a SPrEaD (Successful Project Expansion and Dissemination) project building upon an earlier successful ITEST project: Mayor's Youth Technology Corps (MYTC –NSF DRL-0737589). GRACE is grounded in a theory-to-practice framework in which students gain a working knowledge of the concepts and then apply them to real world situations. GRACE leverages online learning environments, face-to-face intensive trainings, blended deliveries, and workplace mentoring to engage the students in learning STEM (GIS/T – geographic information system and technology in particular) with a foreseeable goal, employable high-tech skills with a hands-on internship in an agency or organization as the capstone. GRACE develops a model of purposeful applications of technology-based education for STEM careers in the workplace that enable youth in economically disadvantaged communities to have opportunities for determining their own futures.

Eastern Michigan University (EMU) and Michigan Virtual University (MVU), in collaboration with Michigan Mathematics and Science Centers Network (MMSCN), Michigan Communities Association of Mapping Professionals (MiCAMP), and Michigan Earth Science Teachers Association (MESTA), will recruit 40 schools, 120 teachers, and 5000 students to start a three-tiered learning process.

Registration for Teacher Cohort 5 is now open - how to enroll: Interested teachers should register for the Professional Development by September 15th to become part of GRACE Teacher Cohort #5. **Sessions begin on October 6th** (see other dates on **http://www.nsfgrace.net** click TEACHERS tab.)

Teachers can register online, at http://nsfgrace.net, or through email to ahoff@emich.edu and lmao@emich.edu, or by calling (734) 487-8487.

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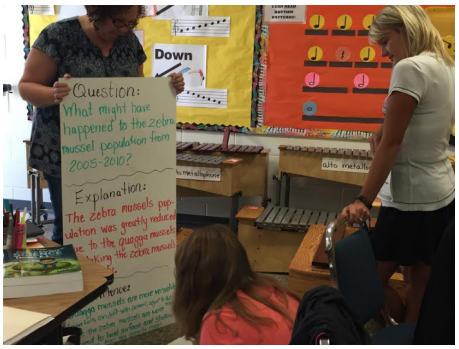
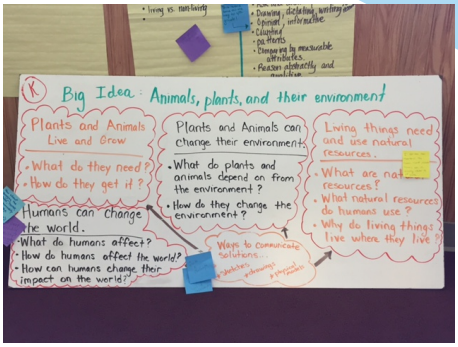
Center Spotlight



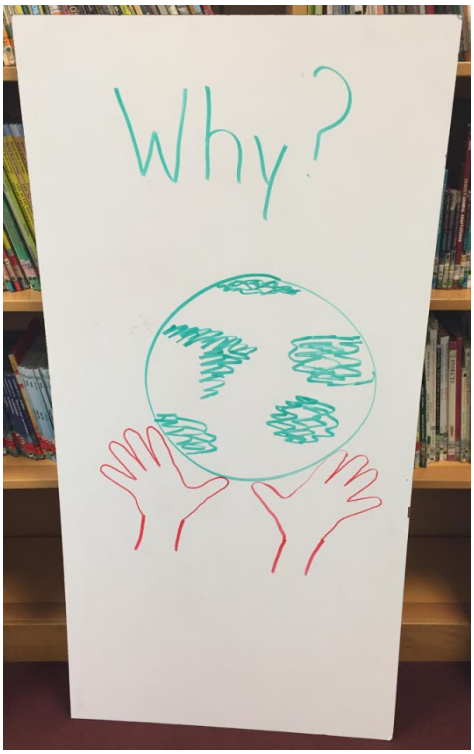


COOR MATH AND SCIENCE CENTER

COOR Math and Science Center's fiscal agent is COOR Intermediate School District and is comprised of six local educational agencies, one public school academy and a few parochial schools. COOR Math Science Center is in the heart of northern lower peninsula in the counties of Crawford, Oscoda, Ogemaw and Roscommon.

The focus of this center is on professional learning and curriculum development while also providing support to the schools as they are directly serving students in their STEM efforts. Collaboration between the districts is key in the increasing quality in math and science instruction. Teachers and administrators are willing to spend their evenings and summers learning more about how to increase their STEM knowledge and to improve their instruction.

Five of our districts have dedicated Title I funds towards supporting math and science professional development in our area.



MATHEMATICS K-8

As most of our schools decided to adopt the same program for K-8 mathematics, we supported them by taking some lead teachers to conferences and providing an introduction to the program. At the end of their first year of implementation we organized and hosted a three day conference by bringing in trainers from around the country. Over 175 teachers attended the summer conference. During the 2015-16 school year, a ten-session evening series was offered on various mathematics topics with 70 teachers participating and collaborating across districts.

Summer Learning Laboratory is a unique form of professional development combined with student programming. Teachers spend all day Monday and two hours each day the rest of the week learning new strategies and immediately trying out and perfecting the strategies with their students. Teachers team to provide students with a rich experience while advancing their own skills. We had the opportunities to work with one of our schools with a mathematics focus.

We couldn't do all of this without the support of our Mathematics Leadership Team composed of teachers from all of our districts. With a focus on student learning and collaboration, this team has proved to be a valuable addition to the COOR Math and Science Center.

COOR MATH AND SCIENCE CENTER

MODELING IN SCIENCE 6-12 MSP

COOR MSC has been one of the host sites for the Modeling in Science Workshops for the past three summers. We began with Modeling in Physics in the summer of 2014 followed by Modeling in Chemistry in summer of 2015, and finally, Modeling in Biology and Modeling in Middle School this past summer. All of the workshops were fifteen days with almost 700 participants statewide.

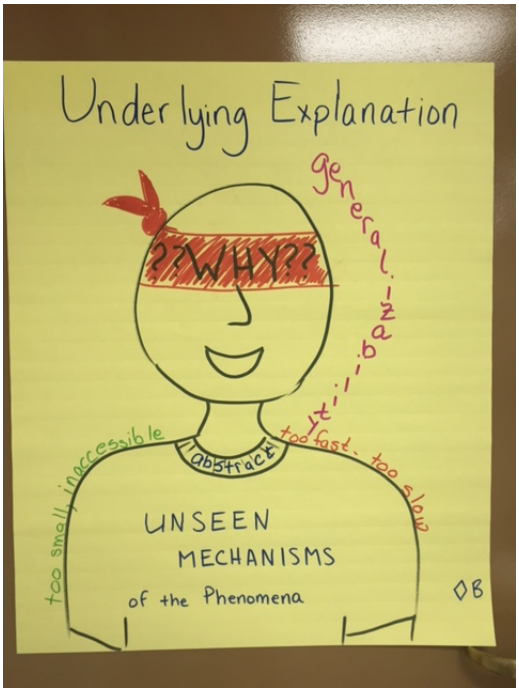
The transformation of the thinking of the educators has been powerful. While some teachers report that they have found the best way to teach science and it fits with their philosophy, others have reported a complete shift in thinking. All have been very appreciative and thankful for the experience. While teachers across the state participated, we are pleased that four of our districts have their entire science staff trained in modeling to make an even greater impact on the students. While student achievement results are preliminary, all indications are that students are thinking more deeply and developing their conceptual understanding of scientific concepts.

Support will continue throughout this school year with on-line collaborative learning laboratories with teachers across the state who have previously participated in at least one of the workshops.

The Aspiring Modeling Facilitators' Academy will help us to achieve sustainability of the workshops in our state. These aspiring facilitators have had opportunities to learn from leaders throughout the country and will soon be able to host workshops in Michigan.

SCIENCE K-8

It has been a busy summer with K-8 teachers building their understanding of the new Michigan Science Standards. Five of our six districts have participated in the first two components of TESLA while beginning to build their storyline of a life science unit in their grade level. This collaboration will continue this fall with T-3 and T- 4 then continuing to build storyline units throughout the rest of this year and next.

We had the opportunity to work with two of our districts in their Summer Learning Laboratory while students participated through an engineering problem as teachers honed their newly learned strategies with the students.

Newly hired teachers and those who were unable to dedicate time this summer are able to gain T-1 through T-4 learning in the evenings this fall.