



# MSC UPDATE

Math & Science Collaborative

## Course Completion Data Important!

The Math & Science Collaborative is tracking long-term progress on all students having access to challenging coursework. The MSC collects course completion data, known locally as the “District Profile for Math and Science Indicators.” A report is then compiled using data concerning the number of graduating seniors that have successfully completed (passed) courses in Algebra I, Geometry, Algebra II, Biology, Chemistry, and Physics. The district provides course enrollment as well as completion data for these challenging courses. The results of the “District Profile” report will be published in the MSC *Coordi-net*.

Each district in the 11-county Southwest Pennsylvania region has received a request for course enrollment/completion data for the 2007-2008 academic year, but many districts have not yet responded. It is extremely important that every district participate in this survey. The information provided by the District Profile of Math and Science Indicators is useful in examining both the regional status of math and science education, as well as exploring individual district information relative to the regional findings. Discussion of regional issues will be most productive if these findings are combined with additional sources of data from international, national, state, and local sources. Districts are requested to provide the data no later than January 23, 2009. If you have any questions, want to verify that your district has complied with the request, or need additional instructions on how to report the data, please contact Geneva Johnson at the Allegheny Intermediate Unit, at [geneva.johnson@aiu3.net](mailto:geneva.johnson@aiu3.net).

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## MSC Programming Preview

This year, the **Science Teacher Leadership Academies** will consist of 5 day modules, either during the summer OR during the school year. The three modules of:

- 1- Immersion in Inquiry,
- 2- Formative Assessment, and
- 3- Integrated Instruction

are to be taken in order, but with various options for when they may be taken. Modules in Inquiry and Assessment will both be offered during summer sessions, for those who find summer more convenient for TLA attendance. All three modules will be available during the 2009-2010 school year. More detailed information will be provided in the spring MSC *Coordi-net* publication, as well as on the MSC

web site.

The MSC is excited to announce that, for the first time, the MSC events, including the Learning Laboratories, will be co-facilitated by local teachers who have participated in the Teacher Leadership Academies!! These “**Collaborative Teachers**,” 5 mathematics and 5 science teachers, will engage in several aspects of planning and delivering the professional development that is scheduled for the upcoming year. We are proud to have these educators working alongside our Coordinators to provide peer leadership and support to our teachers!!

The MSC will be developing

Teacher Leaders across the state! Starting in the 2009-2010 school year, Elementary and Secondary Mathematics Teacher Leadership Academies, will be provided across Pennsylvania in school-year academies. These academies will specifically feature the use of the new **Standards Aligned System**, a tool which helps provide schools with a framework for supporting curriculum, assessment and instruction, professional development, building learning communities, and helping students meet PA Academic Standards. These “SAS Mathematics TLAs” will be available at every intermediate unit. Look for more information about this exciting project in the MSC *Journal*!

Be on the lookout for the MSC *Coordi-net* arriving in your school in March!

# Network Connections Winter Conference

It's time to register for the winter Network Connections conference! The next Math & Science Collaborative Network Connections conference will be held on February 12, 2009 at the Marriott-City Center, Pittsburgh. Network Connections is a one-day conference for educational professionals focused on mathematics and science. Teams of teachers, administrators and guidance counselors from school districts throughout Southwestern Pennsylvania come together to explore relevant research and tools in math and science education. There is no registration fee, but those wishing to attend must be appointed by their districts. Check-in and breakfast begin at 7:30 a.m. The RSVP (registration) form is following.

The Keynote Address will be delivered by Edward Burger, Professor of Mathematics at Williams College. Dr. Burger will speak of the "real prize" in teaching: inspiring students to be imaginative and creative within mathematics and beyond. Entertaining antics and new technologies are both methods to foster joyful pleasures of creative thinking while still preparing students for the stressful reality of standardized exams.

Conference attendees may choose the morning session that they wish to attend. The morning breakout sessions include:

- ◇ **Selecting Effective Math Problems**– Learn how to use the Math Task Framework developed at the University of Pittsburgh to select and implement math problems for your students that will result in the greatest learning.
- ◇ **Lesson Study: Public Lesson**– Experience the presentation to a group of students of a lesson developed by a local district lesson study team. The de-briefing following the lesson will focus on progress toward the goals of the lesson as evidenced by observable student learning.
- ◇ **Seeking Evidence of Student Learning**– Draw from the experience of educators who participated in the inaugural "Learning Laboratory". Learn how observing individual students enabled the educators to recognize evidence of learning.



- ◇ **Managing Effective Student Discourse**– Explore strategies to build mathematical and scientific habits of mind in your classrooms. "Talking math and talking science" go hand in hand with building communities of learners.
- ◇ **Engineering is Elementary (Elementary STEM Program)**– Learn about EiE, a research-based, classroom tested curriculum that integrates engineering and technology concepts and skills with elementary science topics.
- ◇ **Modeling Instruction Program (Physics, Chemistry, Biology)**– This approach stresses the use of modeling for mathematical, scientific, and technological problem solving. The program is dedicated to research-based reform of science instruction and sustained growth and support for science teachers.
- ◇ **Inquiry by Design (Secondary STEM Program)**– This session is crafted for those teachers who want to devise application lessons that take their students beyond the scripted nature of the guided inquiry offerings presented in commercially available programs.
- ◇ **Applying SAS in the Classroom**– Experience a hands-on, minds-on lesson that integrates mathematics and science while addressing PA's Standards Aligned Systems (SAS).
- ◇ **Engage Parents as Partners**– Explore the Parent Handbooks developed to help parents become full partners in their children's learning.
- ◇ **Literacy in Content Areas**– Build capacity to integrate key literacy elements of reading and writing to strengthen the learning of science and mathematics at all levels.

The deadline for registration for Network Connections is **February 4, 2009**. A continental breakfast and sit-down lunch will be provided free of charge. Participants will be asked, however, to pay their own parking, available in the garage below the Marriott-City Center. For further information, visit the MSC web site at [www.iau3.net/msc](http://www.iau3.net/msc) or call Barbara Ash at 412-394-4600.

## NETWORK CONNECTIONS RSVP FORM

**February 12, 2009 from 8:30 AM to 3:30 PM—check in and continental breakfast begins at 7:30 AM**

**LOCATION: Marriott-City Center, Pittsburgh**

Please check website for directions— [www.marriott.com/hotels/travel/pitdt-pittsburgh-marriott-city-center/](http://www.marriott.com/hotels/travel/pitdt-pittsburgh-marriott-city-center/)

To attend Network Connections, you need to be appointed by your district. Please complete and return this form by fax to (412-394-4599) or mail to Math & Science Collaborative, Allegheny Intermediate Unit, 475 East Waterfront Drive, Homestead, PA 15120 **no later than February 4, 2009.**

Name: \_\_\_\_\_ School: \_\_\_\_\_

Organization/District: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

**Primary Affiliation (Check One of the boxes below that best describes what you do.)**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Elem. Teacher of Math    | <input type="checkbox"/> Middle Math Teacher       | <input type="checkbox"/> High School Math Teacher    |
| <input type="checkbox"/> Elem. Teacher of Science | <input type="checkbox"/> Middle Science Teacher    | <input type="checkbox"/> High School Science Teacher |
| <input type="checkbox"/> Supt./Asst. Supt.        | <input type="checkbox"/> Curriculum Director       | <input type="checkbox"/> University/College          |
| <input type="checkbox"/> Technology Coordinator   | <input type="checkbox"/> Principal/Asst. Principal | <input type="checkbox"/> Guidance Counselor          |
| <input type="checkbox"/> Provider                 | <input type="checkbox"/> Business/Industry         | <input type="checkbox"/> Other                       |

### Network Connections Morning Session

(Refer to the February 12, 2009 Agenda (in *Journal*) for full description or online at [www.aiu3.net/msc](http://www.aiu3.net/msc))

Check One in-depth session that you are most interested in attending.

- A.** Selecting Effective Math Problems
- B.** Lesson Study- Public Lesson
- C.** Seeking Evidence of Student Learning
- D.** Managing Effective Student Discourse
- E.** Engineering is Elementary (Elementary STEM Program)
- F.** Modeling Instruction Program (Physics, Chemistry, Biology)
- G.** Inquiry by Design (Secondary STEM Program)
- H.** Applying SAS in the Classroom
- I.** Engage Parents as Partners
- J.** Literacy in Content Areas

### Afternoon Session

Includes Lunch, Keynote Speaker and INTERACT time. Those attending as individuals, not part of a district team, will meet together with a facilitator.



Math & Science  
Collaborative

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## MSC Events

February 11	Eyes on Science for administrators @ AIU
February 12	Network Connections @ Marriott-City Center, Pittsburgh
April 2	Eyes on Science for administrators @ AIU
June 15-18	Learning Laboratory Experience @ local school district
June 22-25	Learning Laboratory Experience @ local school district
June 23-26	Elementary Math (Year 1) TLA @ AIU
June 23-26	Secondary Math (Year 1) TLA @ AIU
June 29-July 1	Collaborative Design (Year 3) TLA @ AIU
June 29-July 2	Learning Laboratory Experience @ local school district
July 7-10	Elementary Math (Year 2) @ AIU
July 7-10	Secondary Math (Year 2) @ AIU
July 13-17	K-8 Science Inquiry TLA @ AIU
July 13-17	Secondary Science Inquiry TLA @ AIU
July 19-24	Governor's Institute for Data Driven Practices for School Improvement
July 20-24	Science Assessment TLA @ AIU

## Math & Science Collaborative

The Math & Science Collaborative of Southwestern PA convenes representatives of teachers, administrators, non-profit organizations, institutions of higher education, and other committed stakeholders to strengthen the teaching and learning of mathematics and science. Originally established with foundation support within the Carnegie Museums, the Collaborative moved to the Allegheny Intermediate Unit in September 2002.

The Math & Science Collaborative was formed in 1994 at a regional "congress" of *stakeholders*, people with a stake in the quality of math & science education - teachers, school administrators, students, parents, school board members, corporations, foundations, universities, museums, and others.



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## Math Science Partnership (MSP)

The Southwest Pennsylvania Math Science Partnership is a collaboration which unites the collective experience and expertise of 55 school districts, 4 intermediate units, 3 colleges and universities, and experts in K-16 education designed to improve student learning in mathematics and science. The Partnership is based on the belief that the level of student achievement in mathematics and science can be strengthened by administrators and classroom teachers who are themselves willing to become learners and deepen their own conceptual understanding of the big ideas in mathematics and science.

The goal of the Partnership is for *all* students to attain the skills necessary for success in the 21<sup>st</sup> century, develop an understanding of how the "big ideas" are connected coherently in the disciplines of mathematics and science, make the connections of those "big ideas" to their everyday world, and develop problem-solvers who are prepared to be discerning citizens and productive employees.



SERVICES, RESOURCES, AND RESEARCH FOR EDUCATION