

SMART CONSORTIUM BELIEF STATEMENTS

- ◆ All students, regardless of race, gender, or socioeconomic background, must have access to higher-level mathematics and science courses.
- ◆ Students must be taught by teachers who possess a strong command of the subject, who demonstrate effective instructional practices, and who regularly participate in quality professional development.
- ◆ Pre-service teacher training and ongoing professional development at all grade levels must be relevant and research-based, with an increased emphasis on mathematics and science content.
- ◆ School personnel must take responsibility for promoting efforts to help all students and parents understand and support the need to improve mathematics and science achievement.
- ◆ Students must accept the responsibility of dealing with the challenges associated with the learning of mathematics and science.

SMART is Committed to Effecting Systemic Change in Mathematics and Science Teaching and Learning

The SMART Consortium represents the collective efforts of more than 50 northeast Ohio school districts to foster continuous, dramatic improvement in science and mathematics learning. A self-directed undertaking created and supported by the Ohio Department of Education and the Martha Holden Jennings Foundation, SMART was formed in 1998 in response to concerns raised by the findings and implications of the Third International Mathematics and Science Study (TIMSS) conducted in 41 countries during the 1993-94 school year. The Consortium's goal was to bring school districts together to capitalize on each other's diversity (SMART members include urban, suburban (including "inner ring") and rural school districts of every size) and to share resources, innovative ideas and practices, instructional strategies and curriculum materials.



The SMART Consortium continues to derive its energy from the strong commitment of its members to improving mathematics and science teaching and learning. To this end, SMART has developed a compelling vision and adopted stretch goals, strategies and recommendations that will enable K-12 public schools to move forward in a sustained, stable manner.

What Does SMART Offer Its Member Districts?

CURRICULUM SUPPORT AND DEVELOPMENT

SMART ESSENTIAL FOCUS ELEMENT DOCUMENTS

The SMART Essential Focus Elements (EFE) for Mathematics Instruction and Essential Focus Elements (EFE) for Science Instruction help K-12 teachers creatively and flexibly implement the Ohio Academic Content Standards. The EFEs target the big ideas for each grade level, identify the skills associated with these concepts, and offer tips for instruction. The guides include a review of the mathematics and science processes, respectively, as well as a listing of great websites that can serve as resources for content knowledge and lesson / assessment design.

MATHEMATICS AND SCIENCE TEST ITEMS

In the world of short cycle assessments, teachers face the difficult task of constructing test items that reflect the learning to be measured, that meet the criteria of a well-constructed test item (equity, language, structure, rigor, validity, relevance of answer choices, etc.), and that provide important feedback to inform instruction. SMART has compiled banks of released test items from a large number of states. These question banks include the test item, an indication of the alignment of the item to the Ohio benchmark and indicator, the answer and a brief description of the skill the item addresses. Visit the SMART website to access these test banks for grades 3 -8 for both mathematics and science.

TEACHER PROFESSIONAL DEVELOPMENT

SMART is dedicated to providing high-quality professional development opportunities in mathematics and science education presented by leading trainers and training organizations. These workshops address both content and instructional practice. Many can be taken for graduate credit through local universities at an additional cost. (Visit www.oai.org/SMART.events.html for a calendar of SMART professional development opportunities.)

SERVICES

SMART's services and products are designed to meet the organizational needs of the K-12 community in the areas of mathematics, science, and technology education. Because SMART has a limited staff, its strategy has been to serve as a broker, matching individuals and institutions in need with appropriate service providers. Some of the services currently offered include proposal development and program development, teacher professional development, leadership training, data analysis, and curriculum improvement. Products available include:

- District requests for professional development are arranged and made available to other districts who share a similar need;
- Mathematics and Science Curriculum Inventory (indicating curricula currently in use by member districts);
- Essential Focus Element documents for both mathematics and science
- Released test item banks for both mathematics and science
- SUCCESS website navigation manual

NETWORKING OPPORTUNITIES FOR TEACHERS AND ADMINISTRATORS

The SMART *Talk-e* newsletter and the SMART Consortium website (www.smartconsortium.org) contains current information about all SMART activities.

In addition, a structured communications network of SMART Associates serves as a learning community dedicated to promoting professional growth in mathematics and science education. Geared to promoting SMART initiatives at the building level, the SMART Associates network leverages the experience and commitment of more than 400 mathematics and science teachers in schools in the SMART district membership.

DATA ANALYSIS

Since its inception, SMART has monitored school performance as measured by student achievement on the Ohio Proficiency Tests. Under the No Child Left Behind Act, schools are now required to disaggregate performance data by gender and ethnicity. SMART tracks these factors on an ongoing basis for its member school districts. SMART regularly offers workshops designed to support school districts in evaluating educational data and instructional materials, with emphasis on standards alignment and instructional strategies.

CONSORTIUM LISTSERVE/DATABASE

SMART maintains an extensive database of member curriculum directors, principals, and initiative participants. This contact database allows the consortium to communicate with these individuals on a regular basis and provides an opportunity to share information and ideas, answer questions, and solicit support materials from a large network of education professionals.

TECHNOLOGY EDUCATION/WORKFORCE DEVELOPMENT

SMART encourages member district participation in several regional science and mathematics-related activities (including the INTEL-affiliated Northeast Ohio Regional Science and Engineering Fair (NEOSEF) and the FIRST Robotics (high school) and FIRST Lego League (middle school) competitions) designed to stimulate interest in science, math and technology in a competitive, fun environment.

STEMM CAREER AND PARENT RESOURCES

STEMM professionals are needed in northeast Ohio. High need career profiles can be found on the SMART website. Currently users can select from Health Care, Manufacturing, Construction, Technology, or Business careers.



Family members play an important role in influencing a child's attitude toward, and success with, mathematics and science. SMART has developed information and resources for parents and guardians to help them students for the 21st century workforce and enhance the

opportunities available to them later in life. Visit www.SMARTConsortium.org and click on Parent Resources

How Can You Benefit from SMART?

In a word? **Participate!** The SMART Consortium's success in promoting quality mathematics and science teaching and learning rests squarely on the commitment made by each of its member school districts to participate in and support the work at hand. Every SMART member district educator can contribute to this important effort.

Consider attending SMART professional development workshops; or join a facilitated working group, such as the Mathematics Instructional Group, and share your knowledge and enthusiasm. Get on the SMART Consortium list serve to keep abreast of activities and educational developments. Share your suggestions for math/science inservice workshops and activities.

What you contribute to SMART will benefit the Consortium immensely. The more we know, the more we grow!

Key SMART Consortium Initiatives

ASSESSMENT FOR LEARNING: THE SMART WAY

The SMART Consortium has been awarded funding from the Cleveland Foundation and the Nord Family Foundation to provide assessment training to school districts in Cuyahoga and Lorain County school districts, respectively. Teams of educators and administrators from partnering SMART member school districts are participating in a series of sessions over 18 months to enhance their assessment literacy and to explore the powerful implications of incorporating Rick Stiggins' *Assessment FOR Learning* model into their instructional practice. The SMART Consortium serves as the northeast Ohio regional contact organization for the Ohio Assessment for Learning Network (O AFLN) and is the exclusive provider of *Assessment FOR Learning* materials and services for Ashtabula, Columbiana, Cuyahoga, Geauga, Lake, Lorain, Mahoning, and Trumbull counties.

PROM/SE

A seven-year, \$35 million program awarded in September, 2003, under the National Science Foundation's Math and Science Partnership (MSP) initiative, PROM/SE involves partnerships with Michigan State University's colleges of education and natural science; Michigan's Ingham, Calhoun and St. Clair County Intermediate School Districts; and Ohio's SMART and High AIMS consortia. MSU faculty will be working with teachers and administrators to improve math and science teaching and learning in grades K-12 by collecting and analyzing data from students and teachers, determining their needs, and providing the resources to improve their knowledge of math and science. PROM/SE will impact about 400,000 students and more than 5,000 teachers in about 70 Michigan and Ohio school districts. SMART's supporting higher education partners in this effort include Cleveland State University, Case Western Reserve University, and John Carroll University.

The SMART Consortium

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SMART Consortium

Stretch Goals

Goal #1

By 2012, all students in the SMART Consortium will achieve at or above the proficient level on state assessments in mathematics and science.

Goal #2

By 2012, the SMART Consortium school districts will increase by 50% the percentage of students achieving in the advanced category and students achieving in the accelerated category.

Goal #3

The SMART Consortium shall establish and monitor a SMART Scholars designation and recognition with rigorous criteria for mathematics and/or science by



SMART Consortium Membership

City/Municipal School Districts*

Avon	Elyria	Parma
Bay Village	Euclid	Polaris Career Center
Beachwood	Fairview Park	Rocky River
Bedford	Garfield Hts.	Shaker Heights
Berea	Lakewood	Solon
Brecksville-Broadview Hts.	Lorain	South Euclid
Brooklyn	Maple Hts.	Lyndhurst
Cleveland	Mayfield	Strongsville
Cleveland Hts./University Hts.	Mentor	Warrensville Hts.
Cuyahoga Valley Career Center	Nordonia Hills	Westlake
East Cleveland	North Olmsted	
	North Ridgeville	
	Oberlin	
	Orange	

Educational Service Centers

Cuyahoga County Educational Service Center
Cuyahoga Heights Local Schools
Independence Local Schools
Richmond Heights Local Schools
Geauga County Educational Service Center
Kenston Local Schools
Newbury Local Schools
West Geauga Local Schools
Lake County Educational Service Center
Fairport Harbor Exempted Village Schools
Kirtland Local Schools
Madison Local Schools
Painesville City Local Schools
Painesville Township Local Schools
Perry Local Schools
Wickliffe City Schools
Willoughby-Eastlake City Schools
Lorain County Educational Service Center
Avon Local Schools
Clearview Local Schools
Columbia Local Schools
Firelands Local Schools
Keystone Local Schools
Midview Local Schools

Organizational Members

Ohio Board of Regents
Ohio Department of Education
NASA Glenn Research Center
WWIZ/PBS (ideastream)
Martha Holden Jennings Foundation
Keithley Instruments, Inc.

Lubrizol Corporation
R. E. Warner & Associates
American Association for the Advancement of Science (AAAS)