

FINDING THE

A Call For Collaboration

SOLUTION[®]

(Summary of Recommendations)

science education is the collective wisdom of all. The State of Ohio will have a system of learning mathematics and science at school, at home and in the community. The vision in Ohio is a vision that reflects five priorities for change presented here for student learning in mathematics and science.

The time to work together to maximize the success of our students is now!

It is a call to action for all Ohioans. It is a call to improve mathematics and science education.

An independent advocacy group will be created to improve and revitalize Pre-K-12 mathematics and science education.

A background to succeed in the efforts for improving mathematics and science education in Ohio's mathematics and science education system.

A system of change in Ohio's mathematics and science education from Ohio parents, teachers, and the community vision.

Identify

Assessments

Ability

A system that encourages and motivates students, parents, and the community. Major changes can only happen with the cooperation of the community.

For Collaboration. We look forward to how you can help.

Students is now!

IMPLEMENT LEARNING STANDARDS

1. Continue to develop a uniform, statewide set of age appropriate, researched-based, and professionally recommended learning standards that have been benchmarked against national and international standards.
2. Continue to educate stakeholders about the new standards and how they apply to each component of the mathematics and science education system.
3. Monitor how the standards are being applied to ensure they are reflected in curricula, instruction, and assessment.

IMPLEMENT RESEARCH-BASED CURRICULA AND ASSESSMENTS

1. Use curricula, instructional methods and assessment tools that reflect current scientific research in mathematics and science learning and that have been developed and tested by recognized experts.
2. Ensure that mathematics and science curricula and instruction are carefully aligned with standards and assessments.
3. Ensure that curricula and instruction reflect mathematics and science as inquiry-based disciplines; focus in greater depth on fewer core topics; are supported with appropriate resources; and are fair, genuine and useful to all students.
4. Use researched-based, professionally recommended assessments that specify, measure, and report whether students meet specific content learning standards.
5. Provide timely feedback from assessments so that schools and teachers can use the information to improve student learning in mathematics and science.
6. Participate regularly (as a state) in national and international assessments to learn how Ohio's students are doing in comparison to students in other states and nations.

EMPOWER QUALIFIED TEACHERS

1. Require school districts to use qualified mathematics and science teachers for all mathematics and science instruction.
2. Develop a teacher licensure and training system that ensures all teachers who teach mathematics and science have adequate knowledge of (a) mathematics and science content; (b) scientific research on how students learn mathematics and science; and (c) instructional methods and appropriate, meaningful and effective materials for teaching the subjects at all grades specified on their license.
3. Ensure that mathematics and science content and methods courses in colleges and universities are consistent with, and model, research-based content and instruction.
4. Provide professional development learning opportunities in different forms, such as courses, coaching, mentoring, peer support groups and attendance at professional conferences.
5. Set aside significant daily work time for teachers to devote to professional development activities (time away from regular teaching duties).
6. Support development of school cultures that support professional collaboration among teachers, administrators and professional mathematicians and scientists, and overcome professional isolation.
7. Require school and district administrators to play an active role in collaboration with teachers and in designing and implementing in-service opportunities based on sound scientific practice for professional development.
8. Provide resources to support long-term, sustained professional development.
9. Offer statewide leadership, support, and requirements to help school districts implement continuous professional development programs at all grade levels.
10. Provide compensation to mathematics and science teachers at a level that encourages them to remain in the classroom.

system of mathematics and science education
unity. Ohio's strategy for creating a world-class
ere. These five priorities for change will

our students is now!

"Finding The Solution: A Call For Collaboration"
OMSC Vision Document 2001

COMMIT TO SHARED ACCOUNTABILITY AND RESPONSIBILITY

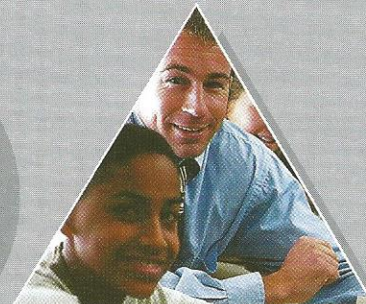
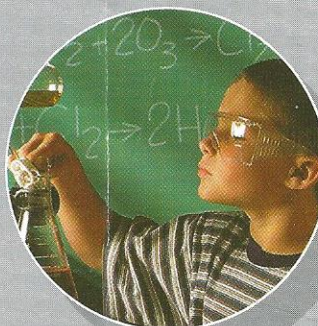
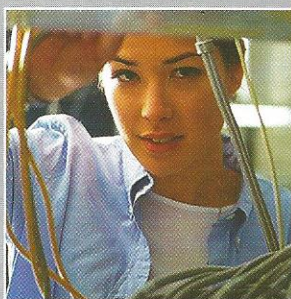
- 4 • Implement a comprehensive, coordinated statewide mathematics and science education system that guides and connects the following components: learning standards, curricula and instruction, assessment, teacher licensure, university programs for teacher education, teacher professional development and education funding.
- Implement a mechanism for regularly monitoring and analyzing the functioning of mathematics and science education goals, including their implementation and results at the state, district, school and classroom levels.
- Conduct a public review of all components of the statewide mathematics and science education systems by experts every five years.
- Encourage all stakeholders to commit to the shared vision for mathematics and science education in Ohio.
- Educate all stakeholders about the benefits of implementing scientifically sound, professionally recommended practices in mathematics and science education.
- Put aside differences based on specific stakeholder interests to work together to promote improved teaching and learning in mathematics and science.
- Encourage all high school students to take mathematics and science courses beyond state minimums.

ALIGN THE SYSTEM

- 5 • Develop a unified, coherent vision that guides all aspects of mathematics and science education in Ohio.
- Support cooperating mechanisms at the state level to assure that mathematics and science programs and policies are research-based and led by experts in mathematics and science education, and that standards, curricula, instructional strategies and assessments are aligned.
- Secure a commitment from all stakeholders to design, implement, support and share responsibility for an accountability system for mathematics and science education that:
 - Provides supportive learning environments in which **all** students learn challenging, applicable, and suitable mathematics and science material;
 - Makes mathematics and science more interesting and relevant to **all** students by providing real-world applications and exploring how mathematics and science can help them make sense of their world;
 - Develops in **all** students a deep and genuine understanding of mathematics and science concepts, emphasizing depth and application of understanding rather than breadth of coverage; and
 - Provides **all** students with learning experiences that allow them to express their own ideas, compare them with other ideas, make reasoned choices between them, and exercise personal judgment.
- Formulate and implement a multi-year integrated improvement plan that addresses **all** elements of Ohio's Pre-K-16 mathematics and science education system.

The active involvement of parents is absolutely critical to a child's success in school. Because teachers cannot do it alone, preschool programs' capacity to offer parent training and information should be expanded.

Governor's Commission for Student Success, 2000



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Ohio Mathematics & Science Coalition