



# Maryland STEM

*Innovation today to meet tomorrow's global challenges*

## What is STEM Education?

STEM education is an approach to teaching and learning that integrates the content and skills of science, technology, engineering, and mathematics. STEM Standards of Practice guide STEM instruction by defining the combination of behaviors, integrated with STEM content, which are expected of a proficient STEM student. These behaviors include engagement in inquiry, logical reasoning, collaboration, and investigation. The goal of STEM education is to prepare students for post-secondary study and the 21st century workforce.

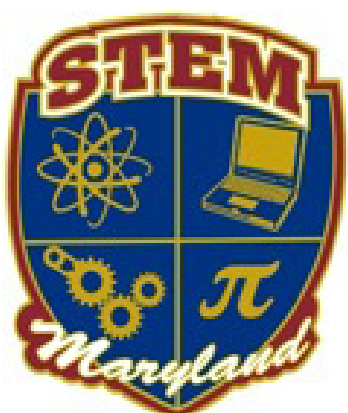
## STEM Proficient Students

STEM proficient students are able to answer complex questions, investigate global issues, and develop solutions for challenges and real-world problems while applying the rigor of science, technology, engineering, and mathematics content. STEM proficient students are logical thinkers who are technologically, scientifically, and mathematically literate.



*“Students with STEM backgrounds are in demand today, so they can fill the jobs of tomorrow. Every student deserves a chance to excel in those fields.”*

*– Sen. Barbara A. Mikulski*



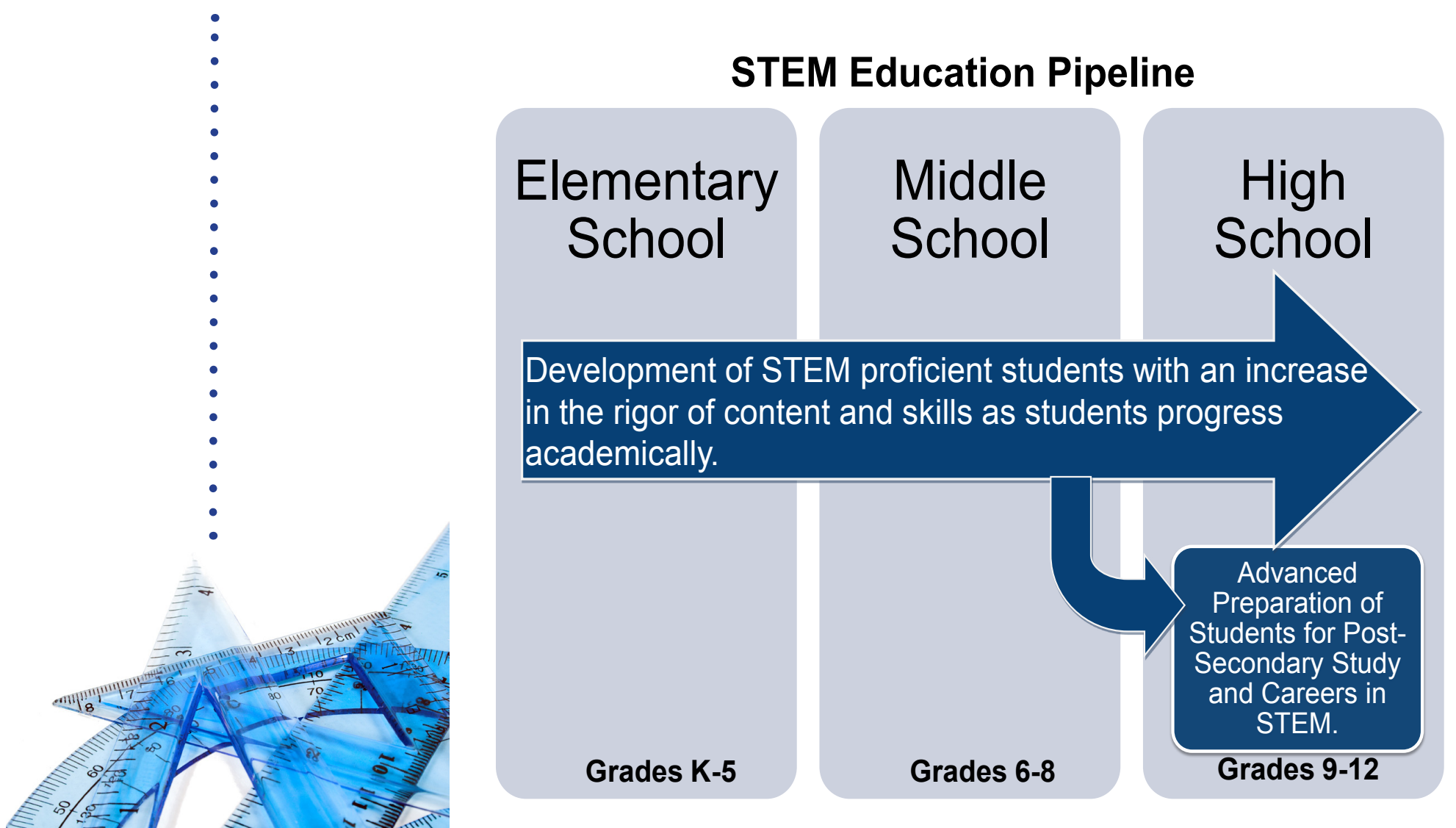
STEM for  
ALL  
students!

# STEM Education in Maryland

*Science, Technology, Engineering, Mathematics*

## STEM Education Pipeline

STEM education is for all students. As early as elementary school, students engage in the real-world application of science, technology, engineering, and mathematics content. As students progress academically, they refine critical thinking and problem-solving skills and become more sophisticated in their approach to addressing global issues. STEM proficient students graduate with the skills and knowledge necessary to pursue post-secondary study and careers in any field.



*“Maryland’s future, and that of our nation, depends in large part on how our schools prepare our children. We are placing an unprecedented priority on Science, Technology, Engineering, and Mathematics – the STEM disciplines – to assure a brighter tomorrow for everyone.”*

*– Lillian M. Lowery, Ed.D.  
Maryland State Superintendent of Schools*

# Maryland State STEM Standards of Practice

## Frequently Asked Questions

### What are the Maryland State STEM Standards of Practice?

The Maryland State STEM Standards of Practice are process standards that define the combination of behaviors integrated with content that are expected of a STEM proficient student. The Maryland State STEM Standards of Practice Frameworks and Instructional Guides explain in detail the essential skills and knowledge of a STEM proficient student for grades K, 1-2, 3-5, 6-8, and 9-12.

### Why are STEM Standards of Practice needed?

The purpose for the Maryland State STEM Standards of Practice, Frameworks, and Instructional Guides is to lay a foundation of STEM Education for all students. These documents provide teachers and students a consistent approach to implementing STEM education and will provide guidance for teachers as they develop STEM centric units or lessons that focus on answering complex questions, investigating global issues, and developing solutions for challenges and real-world problems.

### How were the Maryland State STEM Standards of Practice developed?

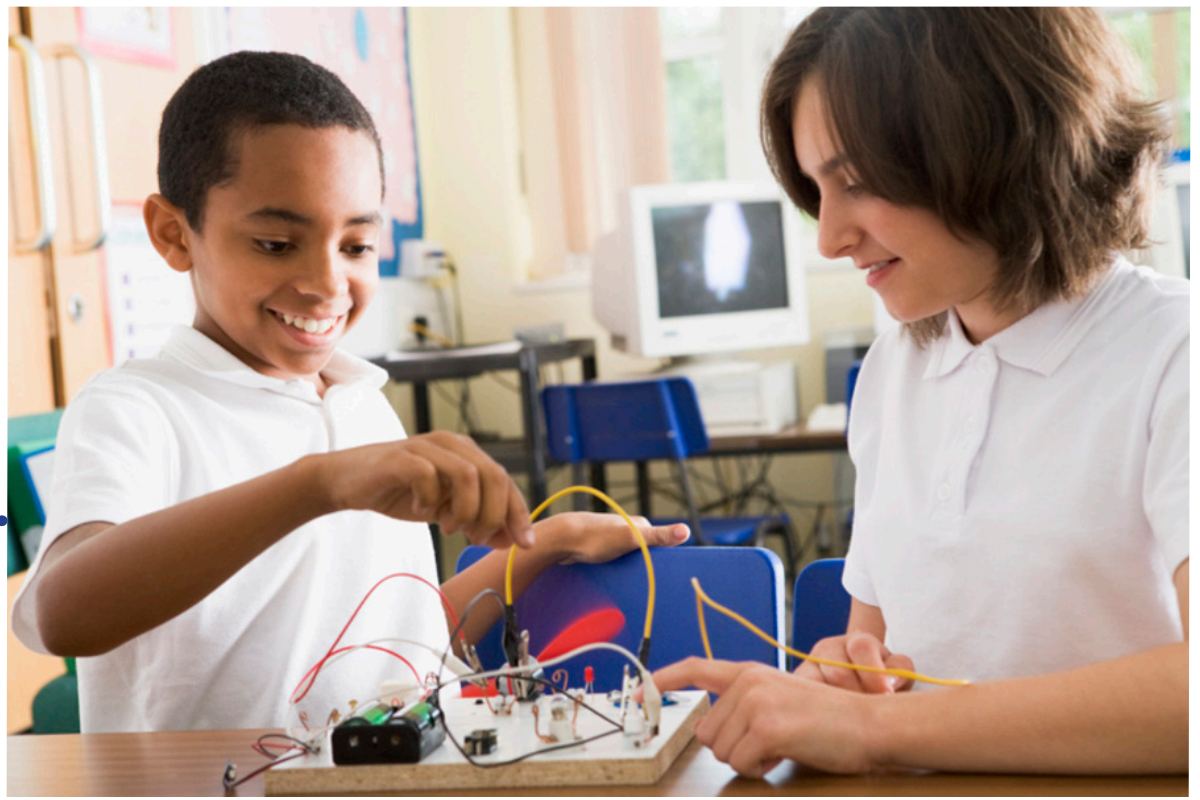
In 2011, Maryland State Department of Education staff joined with stakeholders from across the State to define STEM education and develop STEM Standards of Practice. A total of 961 stakeholders reviewed and provided input on the STEM Standards of Practice via an on-line survey and face-to-face meetings.

Stakeholders included representatives from all 24 Maryland local school systems, businesses and governmental agencies, colleges and universities, and other members of the community. In April 2012, the Maryland State Board of Education accepted the Maryland State STEM education definition and STEM Standards of Practice.

To view a copy of the Maryland State STEM Standards of Practice, Frameworks, and Instructional Guides, please visit:

<http://www.MarylandPublicSchools.org/MSDE/programs/stem>.





## Vision Statement

Maryland's vision is to be a leader in STEM education, preparing and inspiring generations of learners to meet the challenges of the global society through innovation, collaboration, and creative problem solving.

## Contact information for Maryland's STEM Education:

The Office of STEM Initiatives is composed of a coordinator and specialists for elementary, middle, and high school. For additional information about STEM education in Maryland please contact:

George Newberry, Coordinator  
Office of STEM Initiatives  
Division of Instruction  
Maryland State Department of Education  
Phone: 410-767-0441  
Fax: 410-333-1146  
Email: [gnewberry@msde.state.md.us](mailto:gnewberry@msde.state.md.us)  
Website: <http://www.marylandpublicschools.org/MSDE/programs/stem>

Lillian M. Lowery, Ed.D.  
State Superintendent of Schools

Charlene M. Dukes, Ed.D.  
President, Maryland State Board of Education

Martin O'Malley, Governor

Maryland State Department of Education  
200 West Baltimore Street  
Baltimore, Maryland 21201  
410-767-0600  
1-888-246-0016  
410-333-6441 (TTY)

[www.MarylandPublicSchools.org](http://www.MarylandPublicSchools.org)

