

**Science, Technology, Engineering, and Mathematics (STEM)
OAME/AOEM Position Statement
(June 2020)**

The goal of each OAME/AOEM Position Statement is to outline OAME/AOEM's beliefs on issues surrounding math education by providing transparency and guidance to those involved with mathematics education in Ontario. Any clarification regarding a position, or how to proceed in accordance with it, can be brought to the attention of the OAME/AOEM Executive Committee.

The term STEM in this position statement acts as a placeholder for a wide variety of definitions that may include The Arts, Business Studies, and other subject areas along with Science, Technology, Engineering, and Mathematics.

Focal Question

How do we as a community of educators regard STEM, while taking into consideration mathematics education in Ontario JK–Grade 12?

Summary

OAME/AOEM supports the continuing development and integration of existing goals and expectations for STEM programs. OAME/AOEM maintains that the creation of interdisciplinary activities, projects, courses, and programs must support the theoretical foundations of the study of mathematics sufficiently to ensure the integrity of mathematics concepts. Integration of these goals and expectations must simultaneously fulfill the Ontario Ministry of Education Mathematics Curriculum, Grades JK–12.

Increasingly, Ontario students of all ages are involved in STEM activities, projects, courses, and locally designed programs, both inside and beyond the classroom. The key role mathematics plays now and in the future lives of our students is undeniable. The mathematical understandings, ideas, concepts, and related skills are the foundational building blocks of the other STEM subjects.

OAME/AOEM will continue promoting and supporting the following:

- Excellence for our students by developing activities, projects, and courses for STEM programs that are consistent with the Ontario Mathematics Curriculum in terms of content, overall goals, individual expectations, and instructional time for all grades
- Ontario mathematics educators in creating, developing, and producing activities, courses, and programs that maintain the prescribed mathematical teaching and learning outcomes, while integrating knowledge from other STEM subjects

- STEM activities/programs that provide opportunities for students to continue to refine their mathematics learning and extend their deeper understanding of related concepts, so that students can readily and successfully transfer their math knowledge into new contexts
- The development of activities that meet Ontario Curriculum expectations and locally developed programs that successfully use mathematical concepts to enhance the validity, quality, and real-world authenticity of STEM activities/programs for students

OAME/AOEM is committed to the following objectives:

- Aiding the professional growth of mathematics educators within STEM instruction by supporting the creation, development, and use of program design that maintains the integrity of mathematics education
- Promoting professional learning that supports quality mathematics education in Ontario, as well as the development of STEM activities/programs, that fluidly and accurately upholds the learning of various subjects and authentically supports the Ontario Ministry of Education Mathematics Curriculum
- Promoting and effectively communicating with professional educational organizations and other stakeholder groups the vital role mathematics plays in the implementation of successful STEM opportunities

OAME/AOEM is committed to the following actions:

- Establishing a grant system for OAME/AOEM members to develop STEM activities that feature and support mathematical concepts as their foundation, and making the activities available to our members
- Visibly highlighting mathematics in STEM through various venues and professional learning opportunities, for example, by designating a portion of the OAME/AOEM annual conference to emphasize the role of math in STEM; encouraging submissions to the OAME/AOEM *Ontario Mathematics Gazette* and *The Abacus*, which feature math within STEM topics; informing the community with news articles and social media about the significance of math within STEM
- Sharing a leadership role while working in partnership with other professional educational organizations and stakeholder groups, to develop a common definition, vision, program, and organizational pathway regarding JK–Grade 12 STEM education that precisely focuses on mathematics. In addition, the OAME/AOEM Board of Directors will designate a STEM representative, who will report to the Board of Directors.