

The Essential Skill of Apply Math



Why a focus on Mathematics skills for graduation?

Mathematics teaches students to reason logically and develops skills they can carry into other disciplines and many situations in real life. It provides a foundation for the learning of science and technology as well as for the interpretation of quantitative information in other subjects.

Mathematical proficiency requires a foundation of factual knowledge, tied to a conceptual framework, and organized in a way to facilitate retrieval and problem solving (NRC, p. 218)¹. Thus, students need opportunities to deepen both their conceptual understanding and procedural skills in mathematics. A secure understanding of mathematics that is linked to students' sense-making capacities is critical "so that students can puzzle productively over new material, identify the source of their confusion, and ask questions when they do not understand" (NRC, p. 222). Mathematics instruction provides important opportunities for students to master the necessary problem solving and critical thinking skills needed to succeed on the U.S. and global economic playing field.

What is required for graduation and when?

Students who were first enrolled as 9th graders in 2010-11 must demonstrate proficiency in the Essential Skill of "apply math" to earn a diploma. There are three assessment options available to students to show that they have met the requirement.

Approved Assessment Options		Achievement Scores
1.	OAKS Mathematics Test	236
2.	Other Standardized Tests:	
	▪ ACT	19
	▪ PLAN	19
	▪ Work Keys	5
	▪ Compass	66 (Intermediate Algebra Test)
	▪ ASSET	41 (intermediate Algebra Test)
	▪ SAT	450
	▪ PSAT	45
	▪ AP Statistics Exam	3
	▪ AP Calculus AB Exam	3
	▪ AP Calculus BC Exam	3
	▪ IB Mathematics SL Exam	4
	▪ IB Mathematics HL Exam	4
	▪ IB Math Studies Exam	4
3.	Local Performance Assessment: 2 Mathematics Work Samples (one each for two of the following reporting categories): Algebra, Geometry, Statistics	Score: 4 on each of the five dimensions (includes accuracy) locally scored with the Official State Mathematics Problem Solving Scoring Guide

¹ National Research Council. (2005). *How Students Learn: Mathematics in the Classroom*. Committee on How People Learn, A Targeted Report for Teachers, M.S. Donovan and J.D. Bransford, Editors. Division of Behavioral and Social Sciences in Education. Washington D.C.: The National Academies Press.

How should schools prepare students for meeting the graduation requirement for the Essential Skill of “apply math”?

The mathematics expectations described in the Common Core State Standards (CCSS) for Mathematics will support proficiency in the Essential Skill of “apply math”. Districts and schools should align curriculum, instruction, and assessment to the standards. Appendix A of the Common Core State Standards for Mathematics provides guidance on designing high school math courses based on the CCSS. Additional resources to assist schools with implementation are listed on the next page.