

Testimony on Common Core Math Standards
Presented by Judy Savage, Executive Director
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Good afternoon. Thank you for the opportunity to expand upon the written comments our organization submitted earlier this month, and thank you for the ground-breaking work that you are undertaking. Developing common core standards appropriate for all learners is a tremendous challenge. We appreciate this opportunity to share the career and technical education perspective.

The Council of County Vocational-Technical Schools represents New Jersey's 21 area technical school districts which together serve about 30,000 secondary students. Approximately 60 schools ranging from small career academies to large academic and technical high schools serve a diverse population that includes some of the state's highest-achieving students, as well as many youngsters with special needs. Together, our schools offer nearly 700 approved CTE programs, ranging from traditional trade and service programs such as building trades and culinary arts to health careers, communications, and STEM. More than 70 percent of our graduates go on to college or postsecondary training, and about 16% went directly into the workforce last year. (See attached profile of county vocational-technical schools for more information.)

As schools that serve a highly diverse community of learners, we understand the challenge of defining rigorous standards that will prepare all students for success in college and careers. A single set of standards simply will not fit all students. We applaud your efforts to differentiate between the math skills that students will need for STEM study and careers, and those that are appropriate for all students. This was a huge improvement from the first to the second draft of the "college and career-ready" standards. In the same vein, we think the effort to identify some different course sequences is a step in the right direction.

However, we remain concerned that the draft standards include many elements that are not essentials skills and knowledge for **all** students. The central question is raised in the beginning of the high schools section of the draft: "Where is the College-and-Career-Readiness line drawn?"

The document does not clearly answer this question, but the press release that accompanied it states: "These standards define the knowledge and skills students should have within their K-12 education careers so that they will graduate high school able to succeed in entry-level, credit-bearing academic college courses and in workforce training programs."

We believe this is the appropriate benchmark for defining the standards all students should achieve by the end of 12th grade. But, as the Association for Career and Technical Education points out in a new paper, being ready for credit-bearing college work is not necessarily synonymous with career readiness. ACTE notes that career-ready students must be able to apply academics in context, demonstrate 21st century skills such as critical thinking, adaptability and problem-solving, and have some job-specific skills. The common core math standards, and any model sequence of courses, must recognize the value of applied mathematics, which is a key component of career readiness.

Employers tell us that the greatest deficiency they see in entry-level employees is in the area of **basic** math skills, such as the ability to conduct mathematical operations without a calculator, facility with fractions, decimals and measurement. Basic algebra and geometry skills are also essential building blocks for work- and college-bound students. These foundational math skills, which have practical applications and develop students critical thinking and problem-solving abilities, are essential for all students and should be part of the common core standards that all students will be expected to achieve.

Our concern is that math standards proposed for all students go well beyond the benchmark of readiness for entry-level credit-bearing college coursework or workforce training. This will have significant implications because these standards will ultimately drive high-stakes exams that determine whether students graduate from high school. Including too many elements that exceed the entry-level college benchmark has the potential to dilute emphasis on foundational skills that students must master in order to succeed in two- or four-year college or on the job. Setting the bar too high could have the unintended consequence of squeezing out the time available for career and technical education programs, frustrating marginal students who cannot pass graduation exams, and even reducing student's facility with basic calculations due to over-reliance on calculators.

I am pleased to have with me today a math expert who can speak to the specific concepts in the proposed standards that we think are appropriate for many students, but not all. She will be able to give you some very specific feedback on the standards, as well as some suggestions to improve clarity so that teachers will know exactly what is expected. I will stick with the macro view, and turn my attention to the model for several different sequences of math courses.

The Council of County Vocational-Technical Schools has been closely involved with the development of New Jersey's high school graduation requirements, particularly with respect to the math requirements. After months of debate and deliberation about the appropriate math course requirements for all New Jersey students, our state adopted a requirement for all students to complete algebra I, geometry, and "a third year of mathematics that builds on the concepts and skills of algebra and geometry and that prepares students for college and 21st century careers." This might be a standard algebra II course, or it might be a more practical course that includes elements of algebra, trigonometry, data analysis, and probability, as well as reinforcement and applications of basic math and foundational algebra and geometry concepts. We look forward to collaborating with our Department of Education on the development of this course.

This approach provides appropriate flexibility for all students. It does not diminish the opportunity for STEM students to access advanced mathematics like calculus at the high school level. And it ensures that non-STEM students have the choice of pursuing a traditional college-prep pathway of algebra I, geometry and algebra II, or taking an alternative course that reinforces essential skills and emphasizes real-world applications such as compounding interest and analyzing data.

We recognize that the models are in the early stages of development, and appreciate that they are not intended to be mandates. A model that recommends, but does not require, four years of math is fine, as long as a four-year math requirement does not become a condition of participating in the common core standards initiative. At least one pathway should address the needs of students whose goal is career-readiness at the end of high school or soon after. The models must also recognize that even when quality

K-12 math standards are fully in place, there will be students coming into ninth grade who are not ready for algebra.

Our earlier comments suggested greater differentiation between the two different pathways. Perhaps the model should include three pathways – one for STEM students, one for non-quantitative or undecided students, and one for students who need additional focus on the foundations skills as well as greater emphasis on the application of mathematics. This would provide an appropriate level of flexibility for students, while meeting the goal of ensuring that all students graduate from high school ready to succeed in entry-level, credit-bearing academic college courses and in workforce training programs.

In closing, thank you for coming to New Jersey today and thank you for this opportunity to voice the concerns of our state's career and technical education community. We commend the progress in differentiating the standards for STEM and non-STEM students, but urge you to continue to refine the delineation of concepts, skills, and knowledge that are essential for all students to succeed in entry-level college coursework or career-focused training.