Karen B. Salmon, Ph.D.
Acting State Superintendent of Schools

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TO: Members of the State Board of Education

FROM: Karen B. Salmon, Ph.D.

DATE: June 28, 2016

SUBJECT: Presentation on Career and Technology Education

PURPOSE:

The purpose of this item is to provide an update on Maryland's system of Career and Technology Education (CTE) to the State Board of Education. The Board will be presented with a PowerPoint presentation which is attached.

BACKGROUND/HISTORICAL PERSPECTIVE:

Career and Technology Education (CTE) consists of sequential programs of study that prepare high school and community college students for entry into a wide range of careers, as well as further study. Program completion results in students obtaining industry-recognized credentials and/or advanced standing in postsecondary education. In Maryland, programs are organized around ten Career Clusters that align with Maryland's economic and workforce development needs and are described at this link.

At the high school level, programs are offered in over 195 comprehensive high schools, 10 technical high schools, and 16 CTE centers. Maryland's 16 community colleges offer programs as well. CTE programs help students develop the academic, technical, and workplace skills needed to pursue careers in areas such as automotive technology, biomedical sciences, construction trades, finance and accounting, pre-engineering, and the teacher academy.

Enrollment in career and technology programs for the 2014 – 2015 school year was 95,991 high school students and 63,003 community college students. The high school graduating class of 2015 included 12,301 students who completed a CTE program of study.

The Carl D. Perkins Career and Technical Education Improvement Act provides federal resources to states to support CTE programs of study. For the 2015 – 2016 school year, Maryland received $15,181,537 in federal funding. These funds were used to prepare CTE

students for both college and careers by developing new programs, continuously improving existing programs, and providing CTE teachers with high-quality professional development in cooperation with representatives from business, industry, and labor organizations.

The most recently reauthorized Perkins Act was signed into law in 2006. The Act requires states to submit an application to the United States Department of Education called a "State Plan" that specifies how the requirements of the Act will be carried out. The Act's Accountability provisions included new performance measures for both secondary and postsecondary programs. The attachments include a review of some of the accountability measures.

SUMMARY:

Maryland's system of Career and Technology Education includes career-focused programs of study designed to support high school graduates meeting college and career-ready standards. About 38 percent of Maryland's high school students participate or enroll in one or more CTE courses each year. High school CTE programs are typically a four-course sequence of instruction that provides students an understanding all aspects of a career field where they apply academic, technical, and employability skills while developing in-depth knowledge. For example, students in the pre-engineering program learn about the field of engineering and then choose a specialty course in Civil, Aerospace or Biotechnical Engineering.

The Perkins Act continues a state and local performance accountability system designed to assess the effectiveness of secondary and postsecondary programs. Included in federal accountability measures is a Technical Achievement indicator which requires the State to measure student attainment of technical proficiency using assessments aligned with industry-recognized credentials. Maryland also measures the number of high school students completing a CTE program of study who have also completed the course entrance requirements for admission into the University System of Maryland (USM). Of the 12, 301 CTE graduates in 2015, 61 percent also met the USM's course entrance requirements – the highest percentage achieved to date.

ACTION:

For information only.

Attachments

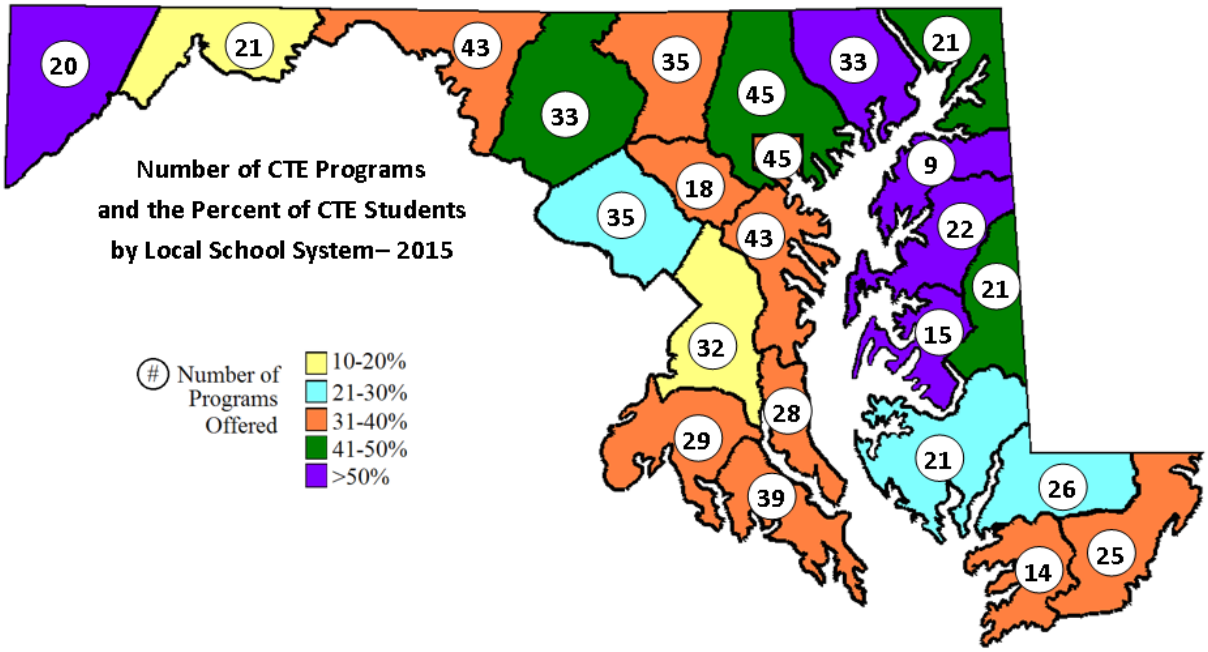
Maryland Career and Technology Education (CTE): Preparing Students for Career and College Success

June 2016 Fact Sheet

Maryland's System of CTE

Career and Technology Education (CTE) is a critical component of the P-20 system of education and workforce development in Maryland. CTE provides high school students an opportunity to pursue a sequential technical and academic program of study leading to advancement in a career field and preparation for college. All CTE programs also include opportunities for high school students to earn early college credit and/or industry certifications aligned to the program area.

Each Local School System (LSS), in partnership with a Local Advisory Council (LAC), determines the CTE programs to offer in its high schools. CTE programs are offered in all LSS. Depending on the size of the school and availability of programs, students may choose from between nine (9) and 45 different CTE programs. For a detailed list of CTE programs, please go to: www.mdcteprograms.org. The map below shows the number of CTE programs offered in each LSS in the 2014-2015 school year, as well as the percent of high school students enrolled in a CTE course that school year.

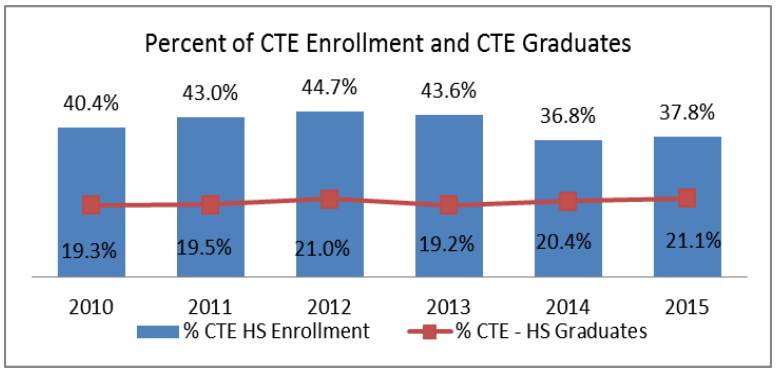


Access to CTE Programs

CTE programs are offered in traditional ***Comprehensive High Schools.*** Fifteen (15) of Maryland's 24 LSS also operate ***CTE Centers***, where students travel to a central location for their CTE programs. A third delivery model is a ***Technical High School***, in which all students receive both the academic and technical components of their high school studies. Across Maryland, CTE programs are offered in:

- 195 Comprehensive High Schools (80,053 students or 83% or of CTE enrollment),
- 16 CTE Centers (8,743 students, or 9% of CTE enrolment), and
- 10 Technical High Schools (7,195 students or 8% of all CTE enrollment).

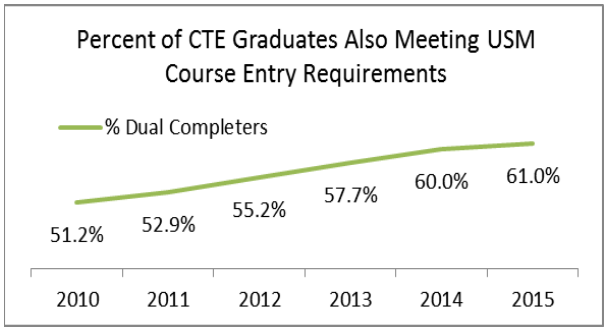
High school students are encouraged to explore career areas of interest through CTE courses and programs. In 2015, total CTE enrollment was **95,991** students, nearly 38% of all high school students.



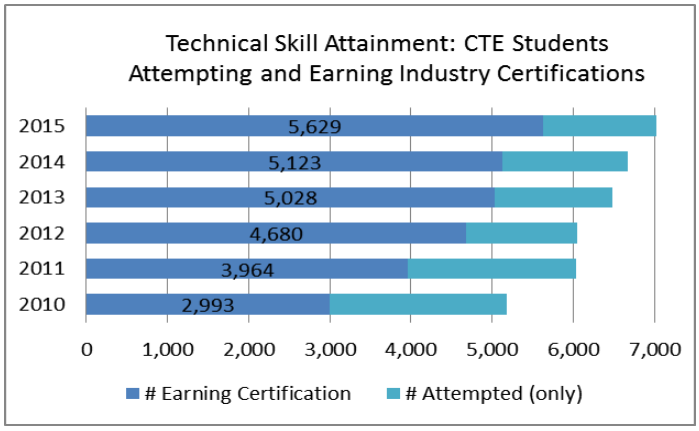
CTE programs of study include a series of courses. Students who progress into upper-level CTE courses are engaged in more advanced career preparation including opportunities for internships, earning industry certifications and/or early college credit related to their chosen career pathway. The number and percentage of CTE graduates in 2015 increased to 12,301 or 21% of the graduating class.

Preparing Students for College and Careers

CTE programs are designed to meet academic, technical and employability standards. Programs of study are designed to allow students to complete both rigorous academics and their chosen CTE program. An indication of a student's readiness for college is their ability to meet the course entry requirements for the University System of Maryland (USM) schools. Students meeting this requirement and a CTE program of study are designated as dual completers. In 2015, 61% of all CTE completers also met USM course entry requirements.



Many CTE programs are also aligned to an industry certification. This provides an opportunity for students to demonstrate technical skill attainment and career advancement; however, students are not required to pass industry certification exams to earn a high school diploma.



Earning industry certifications provide students a competitive advantage in their transition to careers and college. Students with an industry-recognized credential may also receive articulated or transcripted credit in postsecondary CTE degree and certificate programs. This indication of student achievement has shown steady progress with a current pass rate of 80% and 5,629 students earning industry certifications or related college credit.

For more information about Maryland CTE Programs of Study, please visit the Maryland State Department of Education, Division of Career and College Readiness at www.marylandpublicschools.org.

Maryland's System of CTE:
Promoting College and Career Readiness

Career and Technology Education (CTE) in Maryland

June 27, 2016

Lynne M. Gilli, Ed.D.

Jeanne-Marie S. Holly

Patricia Mikos

CTE Program Managers

Division of Career and College Readiness

MARYLAND STATE DEPARTMENT OF EDUCATION

PREPARING WORLD CLASS STUDENTS

P-20 System of Education

Every step along the pathway is crucial to making each student's future a success

Employment: Career Advancement
Continuing education and lifelong learning

Post-secondary: Career Preparation
Achieving credentials: college, certifications, apprenticeships, military

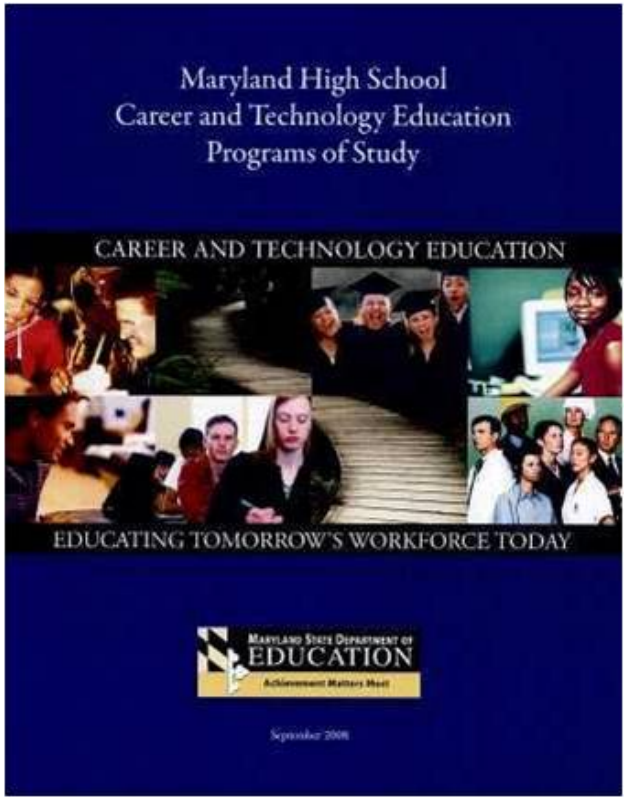
9–12: Career Preparation
Participating in academic and technical courses with guidance on graduation plans

8: Transition
Choosing a program of study and a career major (can change as a student matures)

6–8: Career Exploration
Discovering interest areas, identifying an educational path aligned with interests

K–5: Career Awareness
Learning about the world of careers and the ways in which people make a living

10 CTE Career Clusters



MDCTEPROGRAMS.ORG

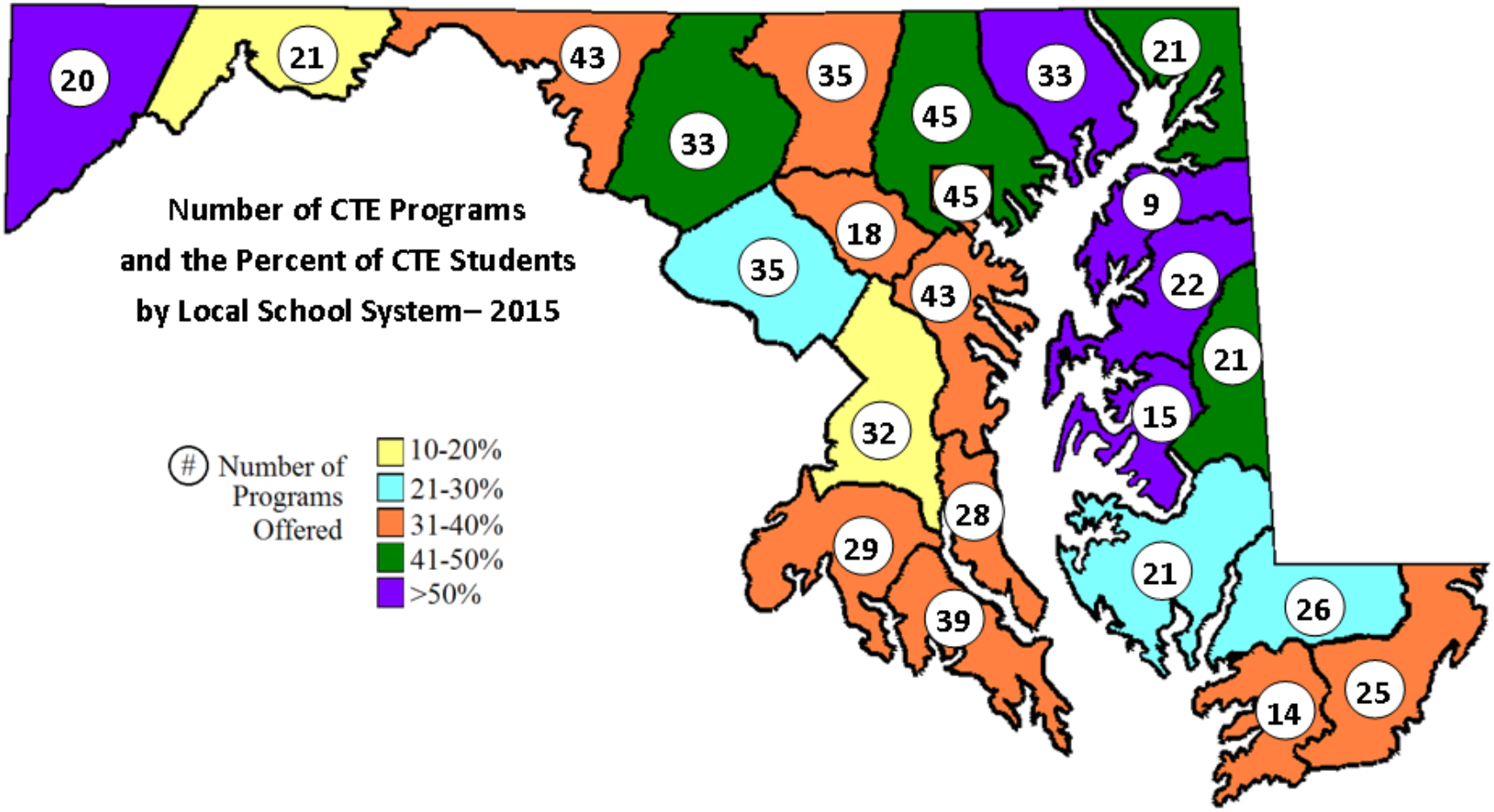
- Arts, Media, & Communication
- Business, Management & Finance
- Construction & Development
- Consumer Services, Hospitality, & Tourism
- Environmental, Agricultural, & Natural Resources Systems
- Health & Biosciences
- Human Resource Services
- Information Technology
- Manufacturing, Engineering & Technology
- Transportation Technologies

CTE Programs of Study – The "New" CTE

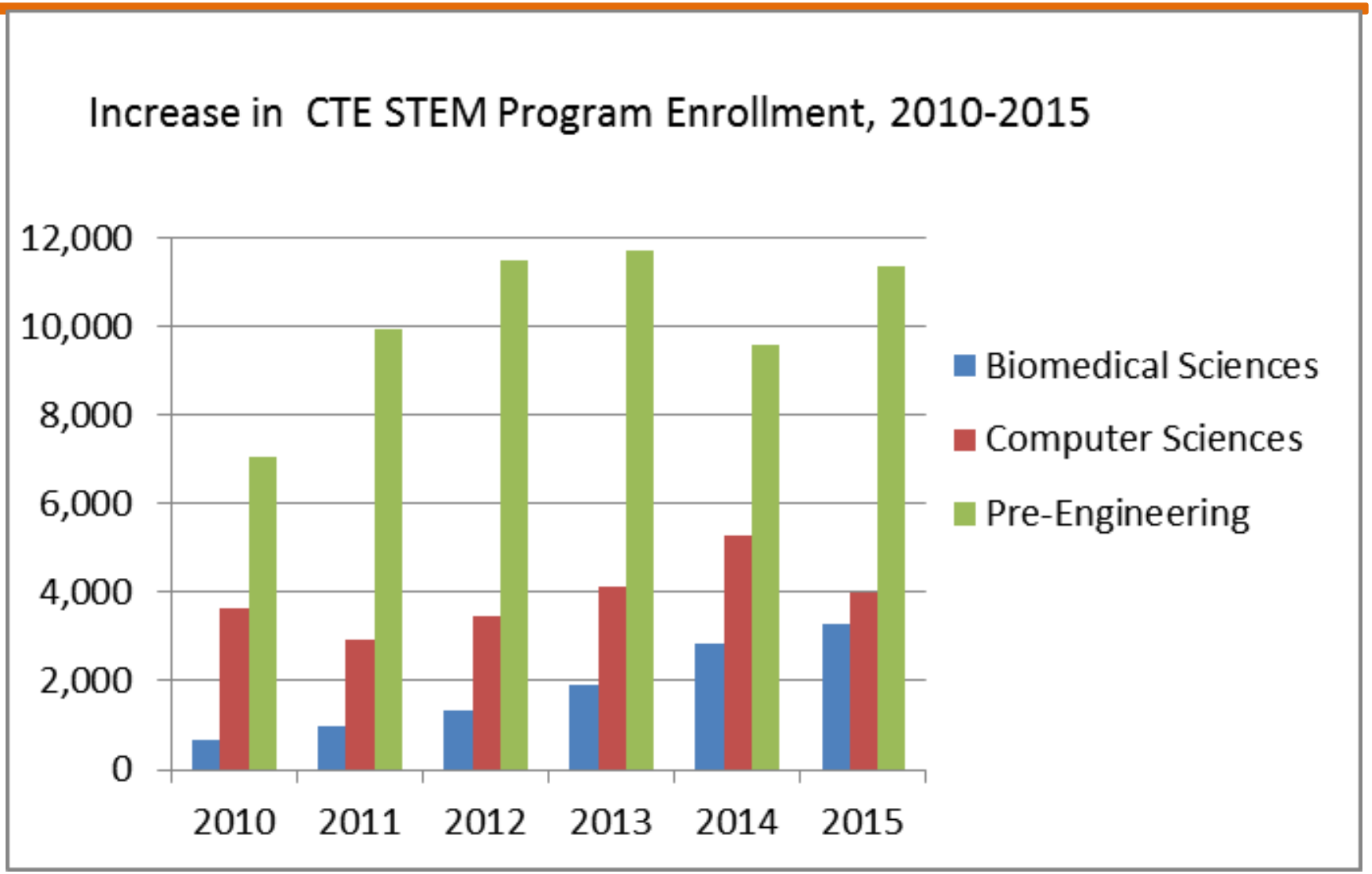
- provide students with a planned, sequential program of study leading to early college credit and/or industry-recognized credentials
- support students in making decisions about their academic and career plans
- align to industry standards and advancement in apprenticeships, employment and postsecondary CTE programs

High School Program					College Program
Requirements	**Grade 9**	**Grade 10**	**Grade 11**	**Grade 12**	
English - 4	English 9	English 10	English 11	English 12	English/Lang. Arts (__ Credits) Include AP options
			AP Language	AP Literature	
Social Studies - 3	US Govt.	World History	US History	Government	Humanities/Social Studies (__ Credits) Include AP options
		AP European	AP US History	AP Government	
Mathematics - 3 (Enroll each year of high school up to 4 years)	Algebra I	Geometry	Algebra II	Trigonometry or Pre-Calculus or Calculus or	Mathematics (__ Credits) Include AP options
				AP Calculus	
Science - 3	Earth or Physical Sci.	Biology or	Chemistry or	Physics or	Science (__Credits) Include AP Options
		AP Biology	AP Chemistry	AP Physics	
Phys Ed. - .5/ Health Ed. - .5	.5 Phys Ed.	.5 Health			Career Program Concentration (__Credits) Include Articulation Options, Dual Enrollment, Credit by Exam and Pre-apprenticeship
Fine Arts - 1	.5 Fine Arts	.5 Fine Arts			
Tech Ed - 1	Foundations To Technology				
CTE Completer- 4		**CTE Program Sequence**			
		CTE Course (1)	CTE Course (1)	CTE Courses (2)	
Foreign Lang. – 2 **and/or** Adv. Tech Ed. - 2	Language	Language	Advanced Technology Education	Advanced Technology Education	

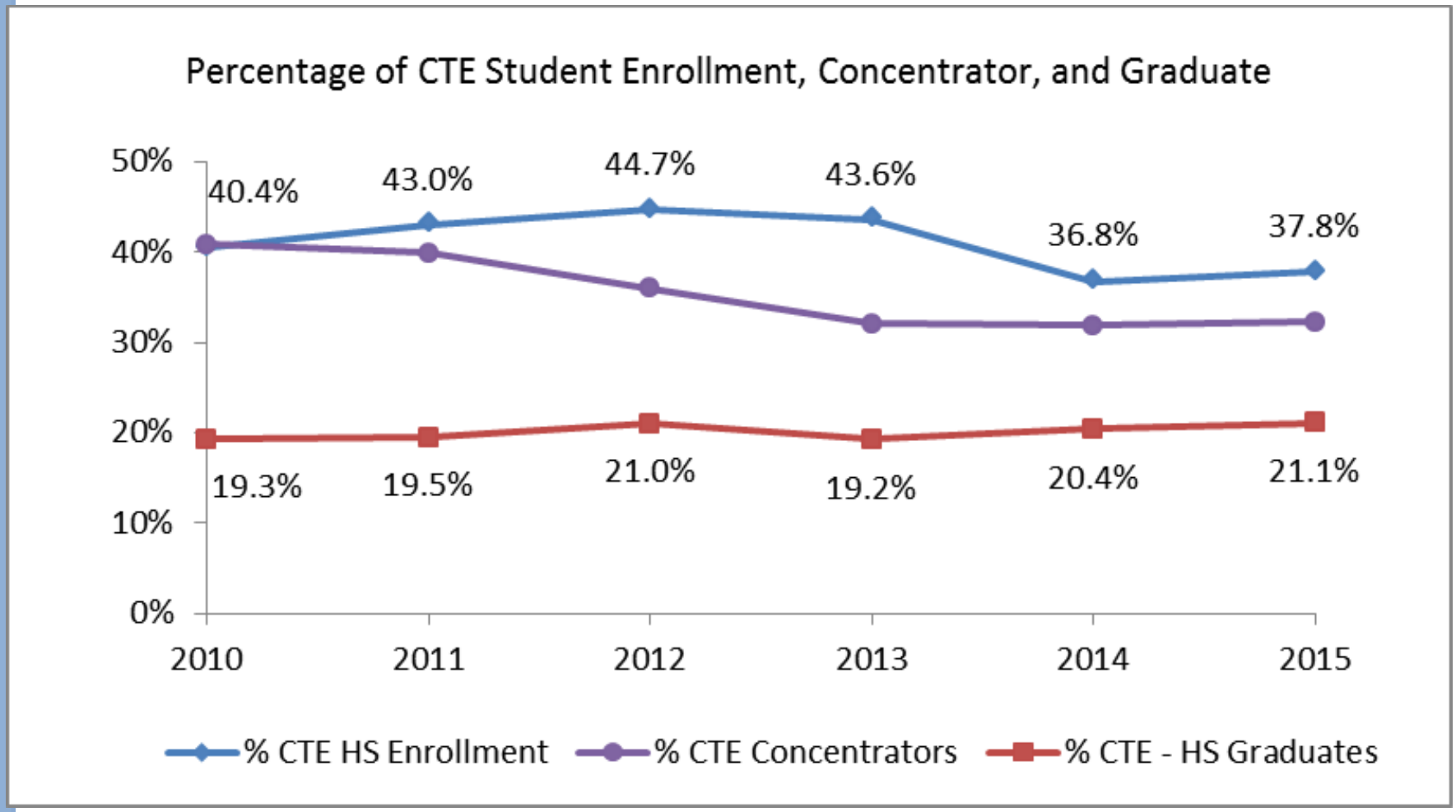
MDCTEDATA.ORG



STEM-Related CTE Programs of Study

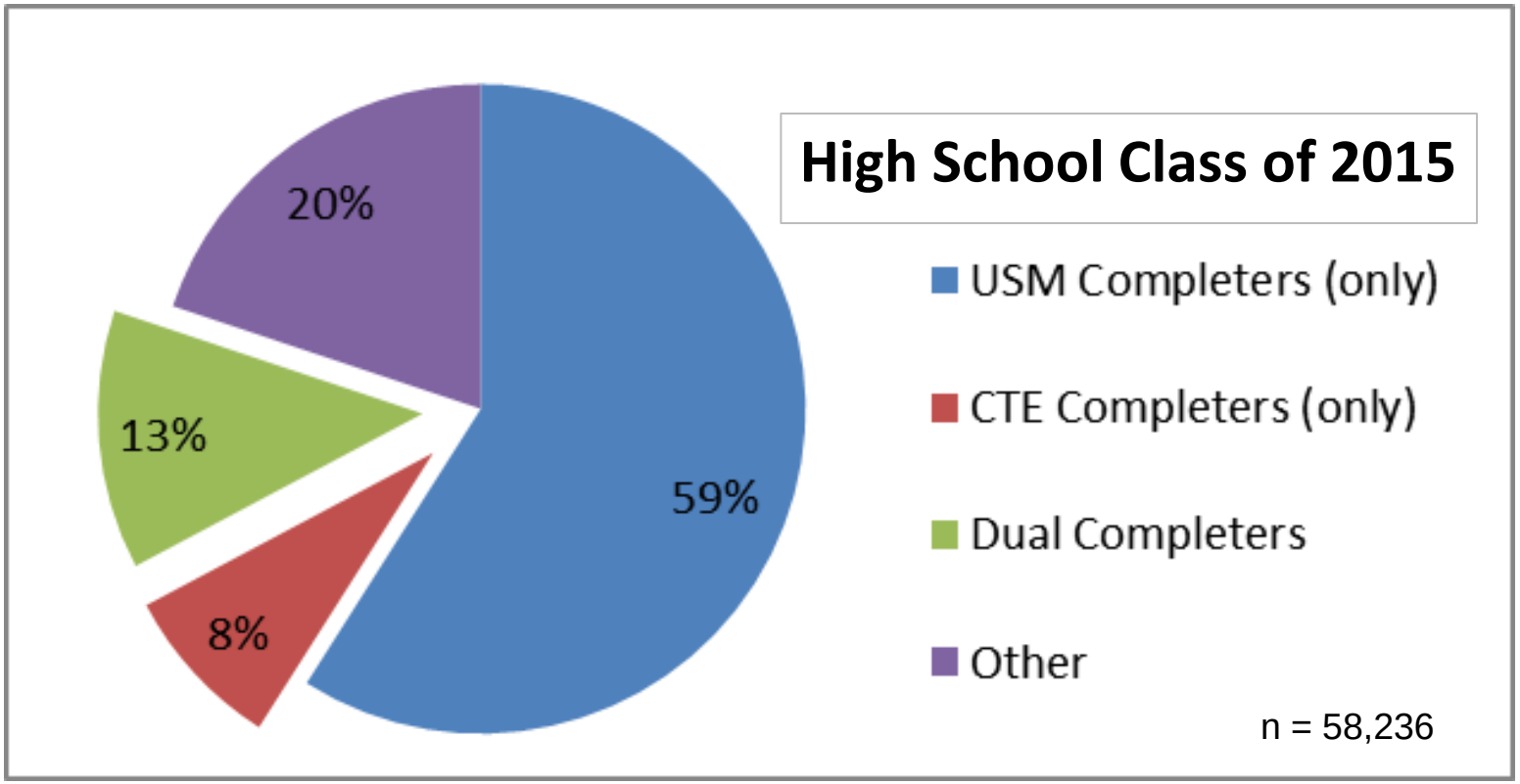


CTE: A Valuable Part of High School



CTE = College and Career Ready

61% of CTE Graduates also met USM Course Entry Requirements



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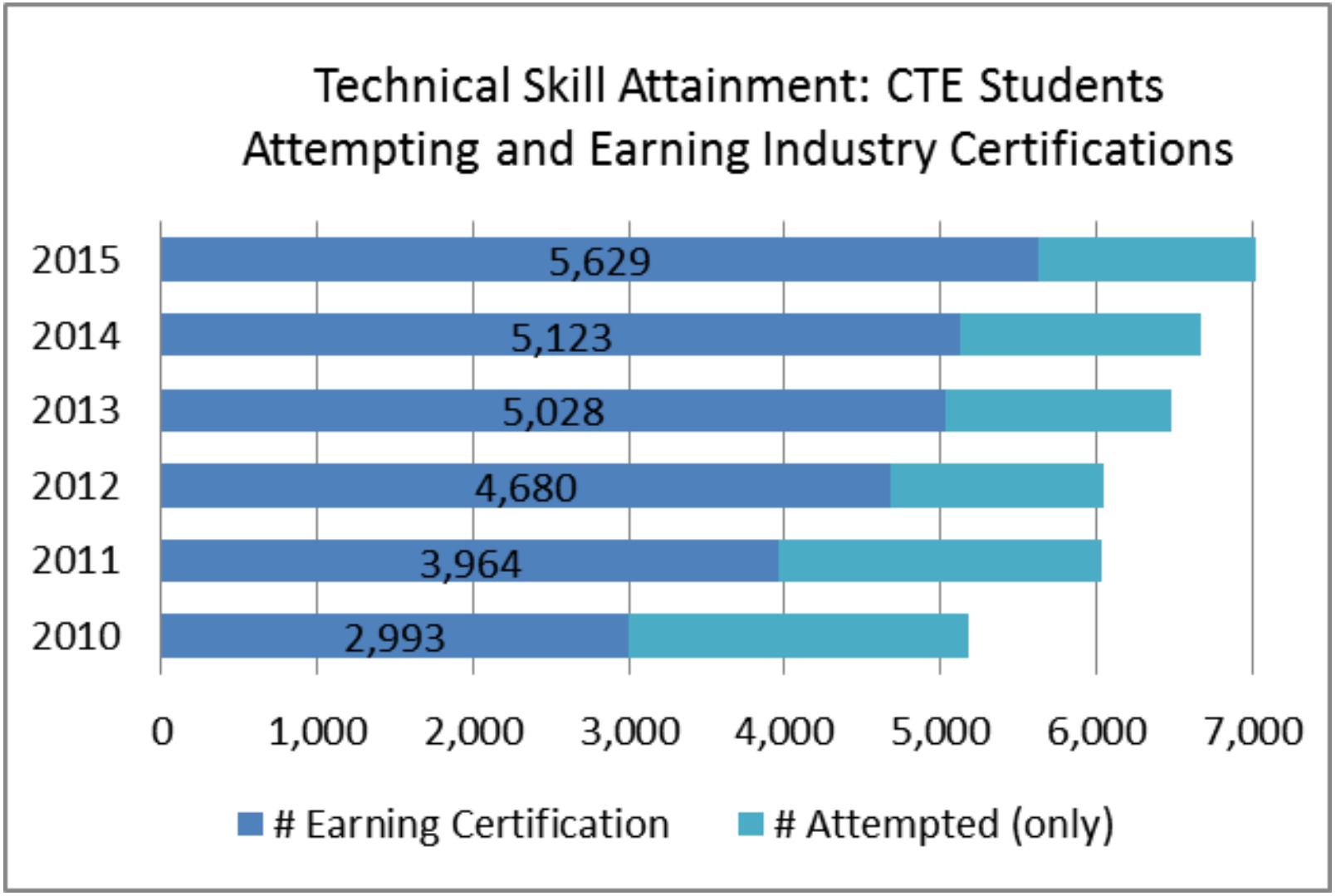


Benefits of the "New" CTE

Students

- CTE and College Prep Academic Curriculum
- Sequenced Program of Study – Typically 4 Credits
- Value-Added Options:
  - -Industry Recognized Credentials and/or
  - -Early College Credit
- Work-Based Learning Experiences
- Leadership Skills Through Career Technology Student Organizations

Stakeholders

- Standardized program design and delivery
- Industry partnership support for program implementation and improvement
- Statewide professional development opportunities
- Industry recognized certifications and licenses
- College credit and program articulation

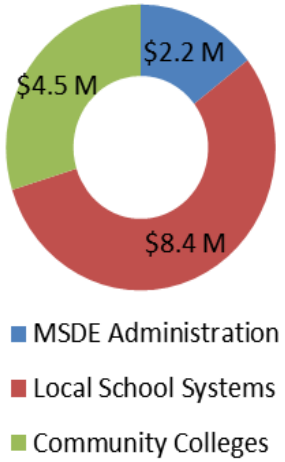
Federal Funding for CTE

- The Carl D. Perkins Career and Technical Education Improvement Act of 2006 is the basis for the federal appropriation. No state dollars are budgeted for CTE.
- Perkins has been relatively flat funded over the years. MD received the same amount of funds in 2014 as it did in 1999 ($14,812,307).
- There was only a 3% increase in 2015 and then a 1% decrease in 2016, resulting in a 2% increase since 1999.

Learning that works for America
CTE®

Federal Funding for CTE

- 85% of the grant is required to be passed through to eligible local recipients (in Maryland all 24 school systems and 14 of 16 community colleges)
- Funds are restricted to improving and upgrading state-approved CTE programs of study, professional development for teachers, and not for maintenance of such programs
- Maryland received $15,181,537 in federal funds in FY 2016 and leveraged $345,606,922 in non-federal funds to support CTE programs



Maryland State Department of Education
Division of Career and College Readiness

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