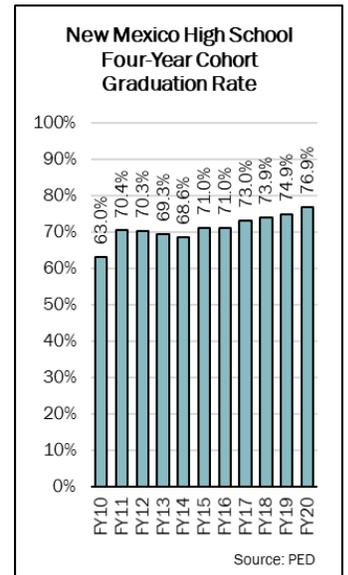


High School Graduation Requirements: An Analysis of State Options

Overview

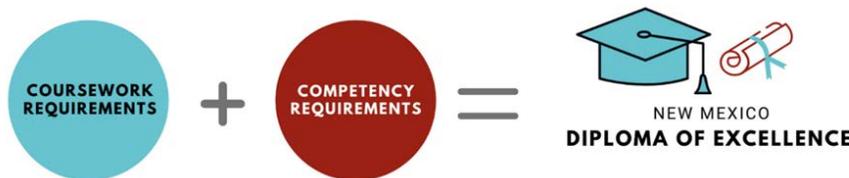
Although there is general consensus that what is taught in high school matters, education largely remains a state and local responsibility. States and communities, as well as public and private organizations, establish schools, develop curricula, and determine requirements for graduation and enrollment. Consequently, there are unique choices made at both the state and local level for what specific courses should be required of students during their high school years.

This brief analyzes the 15 highest-ranked state education systems according to an analysis completed by WalletHub, a financial firm, to identify common themes and practices in designing course requirements for students to graduate from high school. New Mexico graduation requirements are then compared with other state systems to provide a discussion about policy options in designing graduation requirements.



How Does New Mexico Structure Graduation Requirements?

New Mexico statute requires high school students to complete 24 academic units to earn a New Mexico diploma of excellence. See [Table 1, Statutory High School Graduation Requirements](#). In addition to completing these 24 units, New Mexico students must also demonstrate competency in five core academic subjects: math, reading, writing, science, and social studies.



New Mexico students may demonstrate competency through federally-required assessments, local demonstrations of competency, or innovative assessment options. See [Attachment 1: Cohort 2024 Graduation Requirements, Menu of Options](#).

- **Federally-Required Assessments** include 11th grade required assessments such as the SAT, New Mexico Assessment of Science Readiness (NM-ASR), the Spanish Reading Standards-Based Assessment, or other nationally-recognized tests such

as the ACT, ACCUPLACER, Armed Services Vocational Aptitude Battery (ASVAB), or Advanced Placement (AP), among others. Students must still earn passing scores on these assessments.

- **Local Demonstrations of Competency** may include a variety of options such as rigorous portfolio projects and competency-based options. Local demonstrations other than the portfolio and competency-based options must still be approved by the Public Education Department (PED).
- **Innovative Assessment Options** are being newly developed by PED in partnership with a community of practice. These options will be made available statewide, culminating in student exhibitions to demonstrate learning. Guidelines are anticipated from PED by the end of August 2021.

Subject	Units	Additional Requirements
Mathematics	Four (4) units	One unit must be the equivalent to or higher than the level of Algebra 2
English	Four (4) units	Must include a major emphasis on grammar, nonfiction writing, and literature
Science	Three (3) units	Two of the units must include a lab component
Social Studies	Three and one half (3.5) units	Must include U.S. history and geography, world history and geography, government and economics, and one half unit of New Mexico history
Physical education	One (1) unit	Options vary by school district, but can include marching band, JROTC, and/or interscholastic sports
Career cluster, workplace readiness, or a language other than English	One (1) unit	--
Electives	Seven and one half (7.5) units	Electives must meet PED content and performance standards

Note: One unit must be an Advanced Placement or honors course, a dual-credit course, or a distance learning course. A course in health is required, but can be taken during middle or high school and is decided by school districts.

Source: LESC Files

How Are Top Education Systems Ranked?

Massachusetts' education system ranks highest in the country; New Mexico takes the 51st slot.

Source: WalletHub

WalletHub, a financial advice firm, ranked state public education systems using 32 distinct metrics from data from the U.S. Census Bureau, U.S. Department of Education, Centers for Disease Control and Prevention, Office of Juvenile Justice and Delinquency Prevention, and other sources. Metrics used to assess state education systems included factors such as number of public schools, graduation rates, test scores, student-teacher ratios, and condition of surrounding roads, among others. States were given a quality score and a safety score, and assigned an overall score on a 100-point scale, with 100 being the highest quality available.

In addition to quality and safety rankings, WalletHub also considered how states spend their education funds. All states, and Washington, D.C., were categorized into four groups: low spending and a strong school system, high spending and a weak school system, high spending and a strong school system, and low spending and a weak school system. Although there is debate about whether per-student spending accurately reflects the quality of an education system, this metric is often used as a proxy for investment in students. New Mexico was ranked as “high spend, weak school system.”



Using assigned scores, states were then ranked in order of best to worst school systems. The data revealed Massachusetts had the best public school ranking with a total score of 73.14. New Mexico was ranked 51st with a total score of 25.26 points.

Analyzing the Top 15 State Education Systems

The WalletHub rankings scored the 15 states below as those with top education systems:

- | | | |
|------------------|--------------|------------------|
| 1. Massachusetts | 6. Maryland | 11. Rhode Island |
| 2. Connecticut | 7. Delaware | 12. Minnesota |
| 3. New Jersey | 8. Nebraska | 13. Maine |
| 4. Virginia | 9. Wisconsin | 14. New York |
| 5. New Hampshire | 10. Vermont | 15. Illinois |

Using this information, LESC staff researched high school graduation requirements across the highest ranked states to determine whether there are any common threads or requirements of high school students. Before discussing state graduation requirements in these locations, there are notable limitations of this analysis, as well as all methodologies that rank state education systems.

Limitations of Analysis

The nation's highest ranked state education systems are largely located in the Northeast part of the country, with particularly high representation from New England. Many states in the Northeast have robust economic environments, including higher household incomes and greater job opportunities, as well as varying demographics when compared with New Mexico. Massachusetts, for example, has a median household income of \$81,215 as of 2019, with 9.4 percent of its population living in poverty. New Mexico's median household income for the same year was \$49,754, with 18.2 percent of its residents living in poverty. While household incomes are certainly not the only predictor of educational quality, a report from Education Week (EdWeek), an independent education news organization, found robust economic environments, including resources available in households, are a feature of many strong state education systems.

This review also does not include other factors that assess overall educational quality that may be important. Other rankings, such as the [EdWeek Quality Counts report card](#) uses similar, but differentiated, criteria that looks at the overall chance for success for each student by considering early childhood systems, school years, and adult outcomes to evaluate and rank state education systems. Despite variation in the rankings' methodologies, however, New Mexico ranks last in both indexes. Another ranking that covers a broader set of topics around child wellbeing, the [Annie E. Casey Foundation Kids Count Data Book](#), also ranks New Mexico last in education.

Lastly, the LESC analysis is reflective of state law that guides graduation requirements, but does not reflect state-specific practices, administrative rule, or other factors that may influence the high school experience outside of what is mandated by law.

How Do High-Performing States Design Graduation Requirements?

When it comes to designing graduation course requirements, there is no standardized approach, even among the United States' highest performing education systems. A LESC staff analysis of the graduation requirements in the highest ranked 15 states revealed significant variation in course requirements and governance in deciding what courses students must take. See [Attachment 2: High School Graduation Course Requirements in Top 15 States](#).

See Attachments 3 through 5 for additional documents that show a sampling of state graduation requirements in select states from this analysis:

- [Attachment 3: Massachusetts graduation framework and MassCore recommendation;](#)
- [Attachment 4: Wisconsin high school graduation requirements;](#) and
- [Attachment 5: New York state high school graduation requirements.](#)

What Lessons can New Mexico Learn from Other States?

In analyzing the 15 highest-performing state education systems, LESC staff identified several key insights:

Units Required for High School Completion

State	Units Required
Massachusetts	-
Connecticut	20
New Jersey	24
Virginia	22
New Hampshire	20
Maryland	21
Delaware	24
Nebraska	20
Wisconsin	15
Vermont	-
Rhode Island	20
Minnesota	21.5
Maine	-
New York	22
Illinois	16.75
New Mexico	24

- **New Mexico requires it students to complete more units than many other states.** Of the top 15 states analyzed, only two required students to complete 24 units as New Mexico does. Overall requirements ranged from none being set at the state level (Massachusetts, Maine, and Vermont) up to 24 units (New Jersey, Delaware, and New Mexico). Of the 12 states that require completion of a specific number of units, both the mean and median number of units required is 20.5. Massachusetts, Vermont, and Maine do not require students to complete any number of units on a statewide basis, instead allowing these decisions to be made at the local level.
- **New Mexico specifies more time for elective units in a student's schedule than many other states.** New Mexico students must take 7.5 elective units as part of graduation requirements. Many states do not set requirements for elective units, and of those that do, the maximum number identified in this analysis was six units (New Hampshire). This may allow for New Mexico students to have a more dedicated carve out to take courses of their own choosing, which may enhance student choice in education.
- **All states in this analysis require four units of English/language arts,** making it the academic category where there appears to be the most consensus about students taking such courses each year of high school.

Source: LESC Analysis of Education
Commission of the States Data



- Of states analyzed, **only two require the completion of algebra II** as New Mexico also does (Delaware and Minnesota). Only two states require students to take four units of math as New Mexico does (Delaware, Rhode Island).
- **Only one state is meeting national research recommendations to require two years of a foreign language** (Delaware). New Mexico does not meet national research recommendations in requiring two years of study in a single foreign language, and does not appear to be unique in this.
- **Two of the top-performing states (Massachusetts and Vermont) allow graduation requirements to be fully determined by local school boards**, allowing for significant local flexibility so long as students demonstrate proficiency in academic subjects as required by law. Maine previously allowed proficiency-based diplomas, but rolled this option back in 2019, re-instituting academic subject requirements instead.
- In the highest performing state education systems, **social studies, mathematics, and science course requirements appear to have the most rigorous guidelines, with nearly all outlining specific courses and experiences that must be included.**
- **Three states in the top 15 require courses in state-specific history courses, similar to New Mexico** (Virginia, New Jersey, and New Hampshire). However, these are not usually standalone courses and instead embed state history into U.S. history courses or require state-specific content be covered.
- **All states in this analysis, except those that allow local school districts to determine graduation requirements, required four units of English for students to graduate.**

New Mexico requires students to take four units of math, which may be a way to ensure students are taking math through their senior year and avoiding a gap between taking math in high school and postsecondary education.

What Shared Features Do High-Performing Education Systems Have?

In a [2018 review](#) of high-performing state education systems, EdWeek identified five shared features:

1. ***Robust economic environments.*** EdWeek writes that in top-performing states, parents and families tend to earn more and have more stable sources of income. Financially stable families with robust economic opportunity also tend to move less frequently throughout the school year, spend more on in- and out-of-school academic support, and have more understanding of political capital to influence change.
2. ***High kindergarten through 12th grade test scores and graduation rates.*** EdWeek reports states with high reading and math scores as scored in The Nation’s Report Card tend to have high teacher-quality and learning standards, a strong and consistent accountability system, and aggressive and effective school turnaround models that have shared public support.

3. ***Relatively high spending on schools.*** EdWeek’s research identified high-ranking states tend to spend more money on their students even if that spending is not always spread equitably among all their schools.
4. ***Strong foundations in early childhood.*** According to EdWeek, the top-ranked states tend to have more parents with high levels of education and robust access to high-quality preschool programs for all students.
5. ***Widespread postsecondary participation.*** The last shared feature identified is that leading states tend to get large portions of their student populations into *and* through college.

Additional research from the National Center on Education and the Economy’s (NCEE) [Blueprint for a High-Performing Education System](#) notes high-performing education systems both domestically and globally share four components:

1. Effective teachers and principals;
2. A rigorous and adaptive learning system;
3. Equitable foundation of supports; and
4. Coherent and aligned governance

Most importantly, however, NCEE’s research indicates a strong education system is more than the sum of its parts and what is most crucial is that components reinforce one another. NCEE notes effective teachers and principals activate the rigorous and adaptive learning system for students. An equitable foundation of supports ensures that teachers and principals can teach and lead effectively and that all students come to school ready and able to learn at the highest levels. Coherent and aligned governance incentivizes each component to work in tandem, creates accountability for achieving results, and provides a structure to organize the system.

NCEE writes the “most important feature of a high-performing education system is that components are aligned and designed to work together as a system.”

Source: NCEE

Research Review: What Do Students Need to Learn In High School

A high school education ideally prepares students for civic life and ensures students are prepared for any chosen pathway after completing school.

National research indicates college and career readiness is dependent on taking a foundational set of academically challenging courses in high school and on demonstrating proficiency in core subjects. Multiple studies have determined a challenging curriculum comprised of English, mathematics, science, social studies, and a foreign language helps students develop critical analytic skills and preparedness during high school. [Table 2: High School Curriculum Recommendations](#) summarizes several key studies about the types and duration of key courses tied to college and career success.

Table 2: High School Curriculum Recommendations

(expressed in Carnegie units*)

	Center for American Progress Recommendation (2018)	National Center for Educational Statistics (Horn, Kojaku, Carroll, 2001)	U.S. Department of Education (Adelman, 1999, 2006)	State Scholars Initiative (2005)
English	4	4	3.75 or more	4
	3	4	3.75 or more	3
Math	Up to algebra II	Including pre-calculus or higher	Including the highest math course being either calculus, pre-calculus, or trigonometry	Including algebra I, algebra II, and geometry
Science	3	3	2.5 or more or 2 units of core laboratory science (biology, chemistry, and physics)	3
	Including biology, chemistry, and physics with laboratory experience	Including biology, chemistry, and physics		Must be lab science (biology, chemistry, and physics)
Social Science	3	3	2 or more	3.5
	Including U.S. or world history			U.S. and world history, geography, economics, or government
World Language	2	3	2 or more	2
	Both years of study in a single foreign language			
Other		1 Advanced Placement class taken	1 Advanced Placement or dual enrollment class taken 1 Computer Science No remedial English; No remedial mathematics	
Source	https://www.americanprogress.org/issues/education-k-12/reports/2018/04/02/447717/high-school-diplomas/	https://nces.ed.gov/das/epubs/pdf/200116_3_es.pdf	https://www2.ed.gov/rschstat/research/pubs/toolboxrevisit/index.html	https://www2.ed.gov/rschstat/eval/sectech/factsheet/ssi.html

* One Carnegie unit equals 120 hours of class time over the course of a year and generally equates to one full year of academic study.

Source: LESC Files, Center for American Progress, National Center for Education Statistics, and U.S. Department of Education

In addition, a [2018 audit and study](#) of nationwide high school graduation requirements by the Center for American Progress (CAP), an independent nonpartisan policy institute, found most state high school graduation requirements are so poorly designed they often trap students in a “preparation gap,” where they do not qualify for admission to public universities and are also inadequately prepared for other job and postsecondary prospects.

Many states also leave crucial advising decisions up to students by not offering sufficient preparation or guidance counseling. CAP reports rigorous academic expectations must be matched with systems of support, excellent teachers, effective curricula and instructional materials, guidance in planning for goals after high school, and access to challenging coursework.

A [2016 report](#) by the Center for Public Education (CPE), a nonprofit educational organization founded by the National School Boards Association, assessed the outcomes of high school graduates that do not go to college and found for students to graduate college and career ready, high schools must ensure students complete a



rigorous curriculum that includes math at least through algebra II, or its equivalent, and high-level lab sciences.

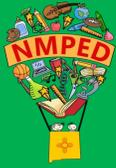
In addition to academic expectations, CPE also recommends students have access to modern career technical education (CTE) programs focused on building knowledge and skills in a specific labor market field, and that guidance counselors play an essential role in communicating various options to students. CPE also notes high-level math and science courses, as well as vocational courses, are not just for college goers.

Rigorous curriculum, combined with access to vocational courses, is important to give all students options after high school. This analysis appears to suggest no state has yet figured out how to combine rigorous academics with access to modern CTE options, at least as required by state statute.

What is the Impact of Course Requirements?

While statutory graduation requirements undoubtedly shape a student's high school experience by influencing the courses offered to – and taken by – students, these are not the only mechanism that influence a student's high school experience. For example, content standards used by a state education department can influence specific course information students learn, even if state statute requires a particular class to be offered. Similarly, administrative rule can impact how state law is interpreted. Further, in states where all education curriculum decisions are decided by local education agencies (LEAs), state statute may not influence course content offerings in many, or any, meaningful ways.

As New Mexico lawmakers consider how to structure graduation requirements, attention to practices and rule outside of law may also be important mechanisms to consider.



COHORT 2024 GRADUATION REQUIREMENTS

Menu of Options to Demonstrate College and/or Career Readiness

Revised 8/19/2020

In what subject areas does a student need to show demonstration of competency?

In addition to meeting course requirements, New Mexico public high school students who entered grade 9 in school year 2020-2021 must be able to demonstrate postsecondary and/or workforce readiness in five content areas: Math, Reading, Writing, Science, and Social Studies.

What policy change now allows for multiple ways for students to demonstrate competency?

Until 2019, New Mexico required students to use the Every Student Succeeds Act (ESSA) required proficiency assessment as a **primary** demonstration of competency and to request a waiver from the PED to use an **alternative** demonstration of competency. Students may now choose from a **menu of options** to demonstrate competency without a waiver. [PED is no longer using primary and alternative structures.](#)

Local school boards **have** the flexibility to make available all or some of the menu options **or can develop Local Demonstration of Competency (LDC) Requirements.**

ESSA-REQUIRED ASSESSMENTS	OTHER DEMONSTRATION OF COMPETENCY			
<p>Math: SAT School Day Mathematics (TBD)¹</p> <p>Reading: SAT School Day Reading and Writing TBD Spanish Reading SBA (1137)</p> <p>Writing: SAT School Day Reading and Writing (TBD) SAT School Day Essay (TBD)</p> <p>Science: NM Assessment of Science Readiness (NM-ASR)</p>	<div style="text-align: center;"> </div> <div style="display: flex; justify-content: space-around;"> <div data-bbox="574 863 1040 1142" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">LOCAL DEMONSTRATION OF COMPETENCY (LDC)</p> <p>A variety of local demonstrations including rigorous portfolio projects and competency-based options may be used as LDCs. LDCs other than the portfolio and competency-based options must be approved by PED.</p> </div> <div data-bbox="1062 863 1523 1142" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">INNOVATIVE ASSESSMENT OPTION</p> <p>In partnership with a Community of Practice, NMPED is developing a new statewide graduation option that culminates with student exhibitions to demonstrate learning. Guidelines will be provided in August 2021.</p> </div> </div>			
OTHER NATIONAL ASSESSMENTS				
<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> <p>Math: Next-Gen ACCUPLACER Quantitative Reasoning (252) Advanced Algebra (252) ACT Mathematics (19), Pre-ACT Mathematics (19) ACT ASPIRE Mathematics (431) ACT WorkKeys Applied Mathematics (3) ACT WorkKeys Graphic Literacy (3) AP Calculus AB or BC or Statistics (2) ASVAB AFQT Composite (31) IB Mathematics (4) PSAT 10 Mathematics TBD SAT Subject Mathematics Level 1 (580) or Level 2 (640)</p> <p>Reading: Next-Gen ACCUPLACER Reading (241) ACT Reading (18), Pre-ACT Reading (18) ACT ASPIRE Reading (424) ACT WorkKeys Workplace Documents (3) AP English Language & Composition or English Literature & Composition (2) ASVAB AFQT Composite (31) IB Language & Literature (4) PSAT 10 Evidence-based Reading & Writing (430) SAT Subject Literature (570) SAT Evidence-based Reading & Writing (430)</p> </td> <td style="vertical-align: top; width: 50%;"> <p>Writing: Next-Gen ACCUPLACER Writing (236) ACT English (18), Pre-ACT English (15) ACT ASPIRE English (428) or Writing (428) ACT WorkKeys Business Writing (3) AP English Language & Composition or English Literature & Composition (2) IB Language & Literature (4) PSAT 10 Evidence-based Reading & Writing (430) SAT Evidence-based Reading & Writing (430)</p> <p>Science: ACT Science (20), Pre-ACT Science (20) ACT Aspire Science (431) ACT WorkKeys Applied Technology (3) AP Biology, Chemistry, Computer Science, Environmental Science, or Physics (2) ASVAB AFQT Composite (31) IB Experimental Sciences (4) SAT Subject Chemistry (640), Ecological Biology (590), Molecular Biology (620) or Physics (630)</p> <p>Social Studies: AP Art History, European History, Government & Politics (Comparative), Government & Politics (US), Human Geography, Macroeconomics, Microeconomics, Psychology, US History, or World History (2) IB Individuals and Society (4)</p> </td> </tr> </table>			<p>Math: Next-Gen ACCUPLACER Quantitative Reasoning (252) Advanced Algebra (252) ACT Mathematics (19), Pre-ACT Mathematics (19) ACT ASPIRE Mathematics (431) ACT WorkKeys Applied Mathematics (3) ACT WorkKeys Graphic Literacy (3) AP Calculus AB or BC or Statistics (2) ASVAB AFQT Composite (31) IB Mathematics (4) PSAT 10 Mathematics TBD SAT Subject Mathematics Level 1 (580) or Level 2 (640)</p> <p>Reading: Next-Gen ACCUPLACER Reading (241) ACT Reading (18), Pre-ACT Reading (18) ACT ASPIRE Reading (424) ACT WorkKeys Workplace Documents (3) AP English Language & Composition or English Literature & Composition (2) ASVAB AFQT Composite (31) IB Language & Literature (4) PSAT 10 Evidence-based Reading & Writing (430) SAT Subject Literature (570) SAT Evidence-based Reading & Writing (430)</p>	<p>Writing: Next-Gen ACCUPLACER Writing (236) ACT English (18), Pre-ACT English (15) ACT ASPIRE English (428) or Writing (428) ACT WorkKeys Business Writing (3) AP English Language & Composition or English Literature & Composition (2) IB Language & Literature (4) PSAT 10 Evidence-based Reading & Writing (430) SAT Evidence-based Reading & Writing (430)</p> <p>Science: ACT Science (20), Pre-ACT Science (20) ACT Aspire Science (431) ACT WorkKeys Applied Technology (3) AP Biology, Chemistry, Computer Science, Environmental Science, or Physics (2) ASVAB AFQT Composite (31) IB Experimental Sciences (4) SAT Subject Chemistry (640), Ecological Biology (590), Molecular Biology (620) or Physics (630)</p> <p>Social Studies: AP Art History, European History, Government & Politics (Comparative), Government & Politics (US), Human Geography, Macroeconomics, Microeconomics, Psychology, US History, or World History (2) IB Individuals and Society (4)</p>
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<p>Abbreviations: AP: Advanced Placement AFQT: Armed Forces Qualification Test ACT: American College Testing ASVAB: Armed Services Vocational Aptitude Battery IB: International Baccalaureate</p>				

¹ SAT and PSAT 10 Results are TBD as standards setting will take place following the initial administration in spring 2021

² An EOC score earned prior to, and after, the COVID-19 release can be used as an LDC.

Students following the **modified option**, whose IEPs establish individualized passing scores, should default to their individualized score when determining demonstration of competency. Students following the ability option, PED encourages the use of local demonstration of competency as well as DLM as the primary assessment.

For additional information, visit the Graduation Requirements page at:
<https://webnew.ped.state.nm.us/bureaus/college-career-readiness/graduation/>

High School Graduation Requirements by Course: Top 15 State Education Systems in U.S.

High School Graduation Requirements by Course: Top 15 State Education Systems in U.S.															
Ranking	State	High School Graduation Rate	Diplomas Offered	Total Required Units	Course Requirements									Notes	Citation
					English/Language Arts	Math	Social Studies	Science	Physical Education and/or Health	Arts	Foreign Language	Electives	Additional Graduation Requirements		
1	Massachusetts	89.0%	Standard	–	<i>Graduation requirements are generally set by local school boards</i>									While state law does not require specific course requirements, Massachusetts does use "MassCore," a recommendation of 22 units to be offered by school districts. These are not required units, but offer state guidance about what local school districts might offer. Specific course offerings are still decided, however, by local school boards.	Mass. Gen. Laws Ann. ch. 69, § 1D; Mass. Gen. Laws Ann. ch. 71 § 3
2	Connecticut	88.5%	Standard	20 (14 specified in statute)	4	3	3	2	1 physical education	Multiple options: 1 unit arts or vocational education		--	Multiple options: 1 unit arts or vocational education	Course requirements are not prescribed by subject area, but by subject area groups.	Conn. Gen. Stat. Ann. § 10-221a(b); Conn. Gen. Stat. Ann. § 10-221a(c)
3	New Jersey	91.0%	Standard	24 (19.5 specified in regulation)	4	3	3	3	3	1	1	--	1.5 0.5 units: Financial, economic, business, and entrepreneurial literacy 1 unit either 21st century life and careers or career technical education (CTE)	New Jersey graduation requirements are presented in credit hours and have been converted to Carnegie units for comparison to other state graduation requirements.	N.J. Admin. Code § 6A:8-5.1; N.J. Admin. Code § 18A:35-1
4	Virginia	92.3%	Standard	22 standard units, 5 of which must be verified units* *A verified unit is credit awarded when a student earns a standard unit of credit and completes a standards of learning (SOL) end of course test.	4	3	3	3	2	Multiple options: 2 world language, fine arts, or career technical education (CTE) units	Multiple options: 2 world language, fine arts, or career technical education (CTE) units	4	1 unit of economics and personal finance required	Students who complete a CTE program sequence and pass an examination or occupational competency assessment in a CTE field that confers certification or an occupational competency credential from a recognized industry or acquires a professional license in a CTE field may substitute the certification, competency credential, or license for either a laboratory science or history and social science credit. Students shall (i) complete an Advanced Placement, honors, International Baccalaureate, or dual enrollment course; or (ii) complete a high-quality work-based learning experience; or (iii) earn an approved CTE credential except when a CTE credential in a particular subject area is not available or does not adequately measure student competency. The CTE credential could include the completion of an industry certification, a state licensure examination, a national occupational competency assessment, or the Virginia workplace readiness assessment. Students must successfully complete one virtual course, which may be a non-credit-bearing course or a required or elective credit-bearing course that is offered online. Students must be trained in emergency first aid, cardiopulmonary resuscitation (CPR), and the use of automated external defibrillators (AED). In accordance with the Profile of a Virginia Graduate, students shall acquire and demonstrate foundational skills in Virginia's 5 C's: critical thinking, creative thinking, collaboration, communication, and citizenship.	8 Va. Admin. Code 20-131-50; 8 Va. Admin. Code 20-131-51

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					English/Language Arts	Math	Social Studies	Science	Physical Education and/or Health	Arts	Foreign Language	Electives			Additional Graduation Requirements
5	New Hampshire	88.1%	Standard	20	4	3 Must include an algebra credit that may be earned through a sequential, integrated, or applied program	2.5 Must include 1 unit U.S. and NH history, 0.5 unit U.S. and NH government and civics, 0.5 unit economics (including personal finance), 0.5 unit world history, global studies, or geography	2 Must include 1 unit physical sciences and 1 biological sciences	1.5 Must include 1 unit physical education and 0.5 unit health education	0.5	--	6	0.5 information and communication technologies	--	NH ADC Ed 306.27
6	Maryland	86.8%	Standard	21 (18 specified in regulations)	4	3 Must include 1 unit of algebra instruction, or 1 or more units in subsequent math courses for which algebra is a prerequisite	3 Must include 1 unit U.S. history, 1 unit world history, and 1 unit in local, state, and national government	3 Must include 1 lab	1 Includes 0.5 units in physical education and 0.5 units in health	1 Options include visual arts, music, theater, or dance (or a combination thereof)	Multiple options: 2 units chosen from world language or advanced technology education, or successful completion of a state-approved CTE program	--	1 unit technology education 1 locally designed, state-approved, high school program of environmental literacy	--	Md. Code Regs. 13A.03.02.03; Md. Code Regs. 13A.03.02.05
7	Delaware	87.7%	Standard	24	4	4 Includes algebra I, geometry, and algebra II	3 Must include 1 unit U.S. history	3 All 3 units must be a lab science; 1 of the units must be biology	1.5 1 unit physical education and 0.5 unit health education	--	2 Students may earn 2 units by taking courses in the same world language or by demonstrating novice-high (or higher) proficiency on a nationally recognized assessment of a language other than English	3.5		Students must earn a unit of math during their senior year.	Code Del. Regs. 14 500
8	Nebraska	89.3%	Standard	20 (13 specified in regulation)	4	3 Course content must include algebraic, geometric, data analysis, and probability concepts	3 Course content must include civics/government, geography, U.S. and world history, and economic concepts	3 Course content must include biological, earth/space, and physical science concepts with corresponding science inquiry skills and lab	--	--	--	--	--	--	92 Neb. Admin. Code Ch. 10, 003

High School Graduation Requirements by Course: Top 15 State Education Systems in U.S.

High School Graduation Requirements by Course: Top 15 State Education Systems in U.S.															
Ranking	State	High School Graduation Rate	Diplomas Offered	Total Required Units	Course Requirements								Notes	Citation	
					English/Language Arts	Math	Social Studies	Science	Physical Education and/or Health	Arts	Foreign Language	Electives			Additional Graduation Requirements
9	Wisconsin	90.4%	Standard	15	4 Must include writing composition	3	3 Must include state and local government	3	2 Must include 1.5 units of physical education and 0.5 units of health	--	--	--	--	A student may earn up to 1 unit in math by completing a computer science course that meets criteria established by the state education department. A CTE course approved by a local school board may also satisfy a math requirement. A single CTE course may not, however, substitute for both a math and science credit. Health may be completed in seventh through 12th grade. The state superintendent must encourage school boards to require an additional 8.5 units selected from any combination of vocational education, foreign language, fine arts, or other courses.	Wis. Stat. Ann. § 118.33(1)(a), (am), (b)
10	Vermont	91.4%	Standard	--	Vermont is implementing proficiency-based graduation requirements								A student in Vermont meets the requirements for graduation when they demonstrate evidence of proficiency in the curriculum of the following subjects: literacy, mathematical content and practices, scientific inquiry and content knowledge, global citizenship, physical and health education, artistic expression, and transferrable skills (including communication, collaboration, creativity, innovation, inquiry, problem solving, and the use of technology). Completion of any other requirements specified by the student's local board also apply.	Vermont State Board of Education Series 2000 – Education Standards, rule 2120.7	
11	Rhode Island	84.0%	Standard	20	4	4	3	3	Pursuant to state law and local education authority policies, the additional 6 required units may include physical education and health, the arts, technology, and foreign language.			--	--	Beginning with the graduating class of 2020, Rhode Island requires students to successfully complete a performance-based diploma assessment, defined in regulation as "multifaceted assignments that serve as a culminating demonstration of a student's applied learning skills and knowledge of one or more content areas." The RI Department of Education notes these performance-based assessments can include graduation portfolios, student exhibitions, senior projects, and/or capstone products. Students in Rhode Island must demonstrate proficiency in 6 core academic subjects: English/language arts, math, science, social studies, the arts, and technology.	200-RICR-20-10-2.3.1
12	Minnesota	83.8%	Standard	21.5	4	3 Must include 1 unit of algebra II by the end of high school and 1 unit of algebra I by the end of 8th grade. Must also include geometry, statistics, and probability	3.5 Must include U.S. history, geography, government, and citizenship, world history, and economics	3 Must include 1 unit biology and 1 unit chemistry, physics, or a CTE credit (CTE credit must meet standards underlying the chemistry or physics credit)	--	1	--	7	--	An agriculture course may fulfill a general science credit requirement. A CTE course may fulfill a general science, mathematics, or arts credit requirement. School districts may require additional course credits or other requirements for graduation beyond the minimum required by the state.	Minn. Stat. Ann. § 120B.024
13	Maine	87.4%	Standard	--	4	2	2 Must include American history, government, civics, and personal finance	2 Must include 1 year of laboratory study	--	1	--	--	--	Maine implemented proficiency-based diploma requirements that are being phased in, beginning with the class of 2021, but proficiency-based diplomas were repealed in 2019. Students may demonstrate achievement of standards through multiple pathways. Achievement may be demonstrated by evidence documented by course and learning experiences using multiple measures, such as, but not limited to, examinations, quizzes, portfolios, performances, exhibitions, projects and community service.	Me. Rev. Stat. tit. 20-A, § 4722-A; Me. Rev. Stat. tit. 20-A, § 4722
14	New York	84.8%	Standard (Regents Diploma)	22 (18.5 specified in regulation)	4	3	4 Must include 1 unit of U.S. history, 2 units of global history and geography, 0.5 unit of participation in government, and 0.5 unit economics	3 Must include 1 unit life science, 1 unit physical science, and 1 unit of either life science or physical science	2.5 Must include participation in physical education each semester and 0.5 unit of health	1 Can include visual art, music, dance, and/or theater	1	3.5	--	Students with a disability may be excused from the requirement for 1 unit of credit in a foreign language as indicated on their IEP, but they must still earn 22 units of credit to graduate.	N.Y. Comp. Codes R. & Regs. tit. 8, § 100.5

High School Graduation Requirements by Course: Top 15 State Education Systems in U.S.

High School Graduation Requirements by Course: Top 15 State Education Systems in U.S.															
Ranking	State	High School Graduation Rate	Diplomas Offered	Total Required Units	Course Requirements								Notes	Citation	
					English/Language Arts	Math	Social Studies	Science	Physical Education and/or Health	Arts	Foreign Language	Electives			Additional Graduation Requirements
15	Illinois	88.0%	Standard	16.75	4	3	2	2	0.5	Multiple options: 1 unit chosen from art, music, foreign language, or CTE	--	2 writing intensive courses 0.25 unit consumer education 1 unit chosen from art, music, foreign language, or CTE	While not a graduation requirement, Illinois state law requires all students take courses in physical education, with some exceptions allowed.	105 Ill. Comp. Stat. Ann. 5/27-22; February 2016 Guidance Document, State Graduation Requirements	
51	New Mexico	76.9%	Standard (New Mexico Diploma of Excellence)	24	4	4	3.5	3	1	--	Multiple options: 1 unit that must include a career cluster course, a workplace readiness course, or a language other than English	7.5	At least 1 unit required for graduation must be an AP, honors, dual credit, or distance learning course	Students may submit a written, signed note of permission from a parent for a student to complete a math course lower than algebra II. A financial literacy course may qualify as one of the 4 required math units if it meets PED academic content and performance standards. Current statute also requires CTE courses, student service learning, and financial literacy to be offered as electives. Health education is also required before graduation but may be offered in middle or high school, as decided by local school districts.	Section 22-13-1.1 NMSA 1978
	2021 Regular Session: HB 83/aHSEIC Proposal			23	4	4	3	3.5	1		Multiple options: 1 unit that must include a career cluster course, a workplace readiness course, fine arts, or a language other than English	6.5		HB83/aHSEIC would have allowed any student in 11th or 12th grade to substitute a capstone course for any core subject requirement so long as the course was guided by a "highly qualified teacher" and met academic content and performance standards.	
	Center for American Progress (CAP) Recommended 15 Credits			15	4	3	3	3	--	--	2	--	--		

MassCore Framework Massachusetts High School Program of Studies		
SUBJECT	UNITS	NOTES
English Language Arts	4 Units	
Mathematics	4 Units	Including completion of Algebra II or the Integrated Mathematics equivalent. A mathematics course during senior year is recommended for all students. Students may substitute one unit of Computer Science that includes rigorous mathematical concepts and aligns with the Digital Literacy and Computer Science standards for a mathematics course.
Science	3 Units of lab-based science	Coursework in technology/engineering courses may also count for MassCore science credit. Students may substitute one unit of Computer Science that includes rigorous scientific concepts and aligns with the Digital Literacy and Computer Science standards for a laboratory science course.
History and Social Science	3 Units	Including U.S. History and World History.
Foreign Language	2 Units	Of the same language.
Physical Education	As required by law	"Physical education shall be taught as a required subject in all grades for all students" (M.G.L. c.71 §3).
Arts	1 Unit	
Additional Core Courses	5 Units	Other additional coursework (including Career and Technical Education) or any of the above.

*A unit represents a full academic year of study or its equivalent in a subject that covers all the standards contained in a specific Curriculum Framework.

** Students enrolled in a state-approved Career and Technical Education program of studies have the option of opting out of Foreign Language and Art and still fulfill MassCore.

*** districts may designate students with demonstrated fluency and literacy in language(s) other than English as meeting the MassCore recommendations for foreign language

MassCore is a recommended program of study Massachusetts high school students need to excel in college, career, and civic life. Developed by an advisory group from elementary and secondary education, higher education, nonprofits, and the private sector, MassCore maintains flexibility for students while letting districts set additional graduation requirements. Courses included in MassCore should be rigorous, engaging, and based on appropriate learning standards for high school or beyond. Fulfilling MassCore is just a start. Students should also engage in a full range of additional learning opportunities, such as: accelerated/advanced coursework; capstones or senior projects; dual enrollment courses; online courses; service learning; work-based learning; clubs and student organizations; varsity and intramural athletics; and part-time employment.

MassCore

Questions and Answers

Revised January 24, 2019



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GENERAL QUESTIONS

1. What is MassCore?

Adopted by the Board of Elementary and Secondary Education (BESE) in 2007 and amended in 2018, MassCore is a state-recommended program of study intended to align high school coursework with college and workforce expectations.

The program of studies includes the successful completion of four units of English, four units of mathematics, three units of a lab-based science, three units of history, two units of the same foreign language, one unit of the arts, and five additional "core" courses. Certain computer science courses can substitute for either a mathematics course or a laboratory science course.

2. Why was MassCore developed?

MassCore was developed to increase the likelihood that high school graduates meet admission requirements for the Commonwealth's four-year public colleges and the University of Massachusetts, as well as improve their chances of admission to private colleges.

3. Who developed MassCore?

A committee comprised of secondary and postsecondary educators, high school students, guidance counselors, members of the business community, and staff from the Department of Elementary and Secondary Education (DESE) and the Department of Higher Education (DHE) met through fall and winter of 2006-2007 to identify the courses and the determine the number

MassCore is a state-recommended program of study intended to align high school coursework with college and workforce expectations.

MassCore increases the likelihood that high school graduates will meet admission requirements for the Commonwealth's four-year public colleges and the University of Massachusetts, as well as improve their chances of admission to private colleges.

All Massachusetts public high school students, including students with disabilities and English learners, should have the opportunity to complete MassCore. The 22 units, or courses, included in MassCore should be rigorous, engaging, and based on appropriate grade level standards in the Massachusetts Curriculum Frameworks and beyond.

Email masscore@doe.mass.edu for more information!

of units. In June 2018, BESE and the Board of Higher Education (BHE) amended MassCore to allow certain computer science courses to substitute for either a mathematics course or a laboratory science course. In January 2019, BESE approved an initial set of 12 courses.

4. Is MassCore for all students?

Yes. All Massachusetts public high school students, including students with disabilities and English learners, should have the opportunity to complete MassCore. The 22 units included in MassCore are expected to be rigorous, engaging, and based on appropriate grade level standards in the [Massachusetts Curriculum Frameworks](#) and beyond.

5. Is MassCore a state requirement?

No. MassCore outlines a recommended minimum program of high school study while maintaining flexibility for districts to set additional graduation requirements. Students may take more rigorous coursework, including honors and AP classes, advanced classes that exceed the grade level standards in the Massachusetts Curriculum Frameworks, early college or dual enrollment classes, or participate in an International Baccalaureate (IB) program.

6. Does MassCore only apply to high schools?

Not necessarily. Districts have the flexibility to decide whether students will be awarded high school credit for courses taken in middle school, provided they are equivalent to high school courses and address the relevant high school grade level standards in the Massachusetts Curriculum Frameworks.

7. Does MassCore apply to students enrolled in career/vocational technical high school programs?

Yes. Students enrolled in career/vocational technical high school programs should have the opportunity to complete MassCore. For information about college admissions for students in these programs, refer to the [Undergraduate Admissions Standards for the Massachusetts State University System and the University of Massachusetts](#).

8. What's the difference between state graduation requirements and MassCore?

Currently, the state high school graduation requirements include aspects of U.S. history and civics, physical education, and earning a "competency determination" [passing scores on the Grade 10 English language arts and mathematics and high school level science and technology/engineering Massachusetts Comprehensive Assessment System (MCAS) tests].¹ All other graduation requirements are determined by districts.

9. Does MassCore retain local decision-making?

Yes. All districts establish local graduation requirements. As a result, the number of core courses and total units required to earn a high school diploma varies widely throughout the state. For example, some districts require students to earn the equivalent of 16 units to graduate, while others require 22 units or more. MassCore establishes a common, minimum set of recommendations for all districts.

10. How does MassCore relate to the Massachusetts Curriculum Frameworks?

All MassCore courses should be rigorous and based on the appropriate grade-level standards in the Massachusetts Curriculum Frameworks. Districts have flexibility in designing teaching and learning around the standards.

¹ For students who do not pass an MCAS test, educators develop an Educational Proficiency Plan (EPP) for the subject(s). MassCore may meet or exceed local course requirements as well as ensure students meet course requirements for an EPP.

11. Does DESE report MassCore completion rates?

Yes. DESE uses information collected through the Student Information Management System (SIMS) to report [MassCore completion rates](#) for districts, schools, and student groups. Additional validations are done using Student Course Schedule (SCS) data.

12. In the context of MassCore, is a “unit” the equivalent of a yearlong course?

A unit represents a full academic year of study or its equivalent in a subject, but it does not mean that students must “be seated” in a class for specific number of hours to receive credit for the course; rather, students demonstrate mastery of the knowledge and skills represented by a unit of instruction. Students may also earn credit for “testing out of,” recovering, or accelerating a course, depending upon individual district policies.

13. Does MassCore have implications for the 4x4 block schedule?

A 4x4 block schedule may enable students to earn up to 32 units (as opposed to 24/28 units in more conventional 6/7-period schedules). Such districts may increase the number of required courses beyond the minimum established by MassCore.

14. Does MassCore change the state’s physical education requirements?

No. MassCore reflects the legal requirement that physical education be taught as a required subject in all grades. However, districts have considerable flexibility in designing their physical education program, including the hours of instruction for physical education, and whether and how a student (particularly at the high school level) can meet the requirement through an organized program of instructional physical activity, including but not limited to: participation in interscholastic athletics, skating or swimming lessons through a private instructor or a community program, or independent study. This discretion is consistent with the authority to permit a student to fulfill academic course requirements by taking a course elsewhere that they deem to be equivalent.

15. Is MassCore sufficiently rigorous for students applying to highly selective colleges and universities?

As the name implies, MassCore outlines the minimum “core” coursework most students should take in high school. Students considering applying to highly competitive colleges and universities should take even more rigorous coursework, including honors courses, Advanced Placement® courses, early college or dual enrollment courses, or participate in an International Baccalaureate (IB) program.

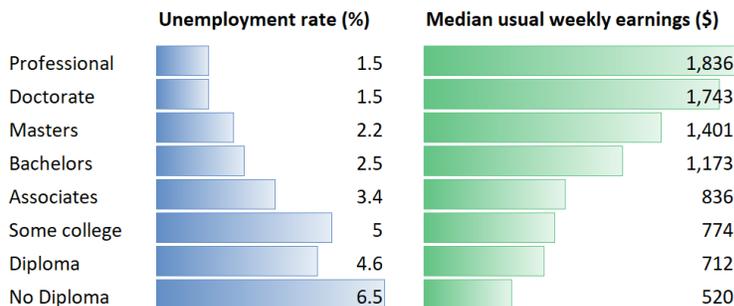
16. If a student completes MassCore, will he or she also meet the admissions standards of the Massachusetts State University System and the University of Massachusetts?

In general, yes (see table below). Due to the growing competitiveness of those schools, higher education officials recommend students go beyond MassCore, particularly for competitive majors that expect or require more advanced study.

	<i>MassCore</i>	<i>Minimum 4-Year State Admissions Standards²</i>
English Language Arts	4 units	4 courses ³
Mathematics	4 units; including completion of algebra II or the integrated math equivalent. A math course during senior year is recommended for all students. Students may substitute 1 unit of Computer Science that includes rigorous mathematical concepts and aligns with the DLCS standards for a mathematics course.	4 courses (including algebra I and II and geometry or trigonometry, or comparable coursework) including math in senior year. Computer Science courses may be considered a mathematics course based on the inclusion of rigorous mathematical concepts and topics.
Science	3 units of lab-based science; coursework in technology/engineering courses may also count for MassCore science credit. Students may substitute 1 unit of Computer Science that includes rigorous scientific concepts and aligns with the DLCS standards for a laboratory science course.	3 courses of lab-based science (drawn from natural science and/or physical science and/or technology/engineering). Computer Science courses may be considered a science course based on the inclusion of rigorous science concepts and topics.
History & Social Science	3 units, including U.S. History and World History	2 courses, including U.S. History
Foreign Language	2 units of the same language	2 courses of the same language
Physical Education	As required by law	-
Arts	1 unit	-
Additional Core Courses	5 units	2 courses (from the above subjects or from the arts and humanities or computer sciences)

17. Does fulfilling MassCore impact student success?

Yes. Research is clear that educational and economic attainment are closely linked. Graduates of four-year colleges earn an average \$1.4 million more than high school dropouts. Students who take a challenging program of study like MassCore in high school are more likely to enroll in college, forego academic remediation, and earn a college degree.⁴ MassCore helps students acquire the knowledge, skills and experiences necessary for success in economically viable career pathways in a 21st century economy.



² Refer to DHE’s [Admission Standards](#) for more details and answers to frequently asked questions.

³ While DHE refers to “courses” instead of “units”, the meaning (equivalent to one full school year of study) is the same.

⁴ Source: Current Population Survey, U.S. Department of Labor, U.S. Bureau of Labor Statistics, 2017.

COMPUTER SCIENCE

18. Why is computer science included in MassCore?

It's the Commonwealth's responsibility to ensure that all of today's students are not only passive information consumers but understand and are proficient in the skills and manner of thinking that are the foundation of our technological world. The ability to effectively use and create technology to solve complex problems is an essential literacy skill. Recognizing the importance of these competencies, Massachusetts was among the first states to adopt Digital Literacy and Computer Science standards in June 2016.

19. Which computer science courses can be substituted for either a laboratory science course or for a mathematics course?

A working group consisting of representatives from secondary and higher education with expertise in mathematics, science and technology/engineering, and computer science identified the following initial set of courses:

- a. **Advanced Placement® Computer Science Principles:** Advanced Placement® Computer Science Principles is not a single course; rather, schools and organizations submit curricular materials to the College Board for audit to ensure they meet or exceed the College Board's expectations as articulated in the [AP® Computer Science Principles Curriculum Framework](#). A listing of ready to use curricula approved by College Board, including preapproved syllabi, lesson plans, formative assessments, and professional development can be found here: <https://apcentral.collegeboard.org/courses/ap-computer-science-principles/classroom-resources/curricula-pedagogical-support>.
- b. **Computer Science Principles:** Based on the AP® Computer Science Principles Curriculum Framework, CSP can be taught as a non- AP® course. A listing of ready to use curricula approved by College Board, including preapproved syllabi, lesson plans, formative assessments, and professional development can be found here: <https://apcentral.collegeboard.org/courses/ap-computer-science-principles/classroom-resources/curricula-pedagogical-support>.
- c. **Exploring Computer Science (1 course):** Exploring Computer Science is an open source curriculum developed by UCLA and the University of Oregon. Exploring Computer Science was explicitly designed to expand participation in computing by traditionally underrepresented students in terms of enrollment, access, knowledge and skills, problem-solving, and attitudes. Exploring Computer Science is pedagogically and conceptually aligned to the AP® Computer Science Principles Curriculum Framework: <http://www.exploringcs.org/>.

20. What criteria did the working group use to identify the computer science courses that can be substituted for a mathematics or laboratory science course?

1. **Alignment with Admissions Requirements for the State's Public Colleges and Universities:** BHE's [Undergraduate Admissions Standards for the Massachusetts State University System and the University of Massachusetts](#) permit the crediting of a high school computer science course as a mathematics or laboratory science course based on the inclusion of rigorous mathematical or science concepts and topics. To meet this criterion, the working group determined that a computer science course must provide substantial opportunities for students to apply the Standards for Mathematical Practice for high school described on pages 16-18 of the [2017 Mathematics Curriculum Framework](#) (if substituting for a mathematics course), or the Science and Engineering Practices for high school as described on pages 66-67 of the [2016 Science and Technology/Engineering Curriculum Framework](#) (if substituting for a laboratory science course). These practices, each of which emphasizes the application of skills, knowledge, and dispositions characteristic of expert mathematicians or scientists in their respective fields, are amply represented in the [2016 Digital Literacy and Computer Science \(DLCS\) Curriculum Framework](#) for grades 9-12. Therefore, a high school computer science course aligned to the 2016 DLCS Curriculum Framework for grades

9-12 also aligns to the Standards for Mathematical Practice and the Science and Engineering Practices for grades 9-12.

2. **Alignment with the 2016 DLCS Curriculum Framework for Grades 9-12:** To meet this criterion, a computer science course must substantially align to the standards in each of the four strands of the framework. For example, the initial set of 12 courses identified as substitutions address 88 percent of the framework, but would cover 100 percent with minimal modifications.
3. **Sufficient Course Rigor, Quality, and Student Preparedness for College:** To meet this criterion, a computer science course must be conceptually and pedagogically aligned to the College Board's expectations for introductory computer science courses, specifically the learning objectives delineated in the AP[®] Computer Science Principles Curriculum Framework.
4. **Equivalent to a Full Year of Learning:** To meet this criterion, a computer science course must be considered a full year course, but it would not mean that students must be "seated" in a class for a specific number of hours to receive credit for the course. Districts have the authority to award credit to students who "test out of," recover, or accelerate a course, depending on individual district policies. Further, competency-based courses, in which students advance and earn credit upon demonstrated mastery, would also be eligible.
5. **Aligned to P-16 Math Pathways:** DHE's P-16 Math Pathways framework proposes organizing introductory college mathematics courses around four mathematics pathways aligned to the appropriate math for a major: calculus for STEM majors, college algebra for elementary education, quantitative reasoning, and statistics. While none of the proposed pathways prohibit high school students from substituting, a student in the first pathway (calculus for STEM majors) may elect to take a full complement of mathematics and sciences courses in addition to computer science (i.e., as an elective).

DESE will identify additional courses on a rolling basis.

21. How can districts implement the substitution option?

The working group recommends that when substituting a computer science course for a mathematics course, students, parents/guardians, guidance counselors, and teachers consider the following:

- All students should continue to take algebra I and algebra II;
- Students should consider taking computer science following geometry and prior to algebra II; and
- All students should take a mathematics course in their senior year.

Students interested in pursuing STEM majors in college should consider taking a full complement of math and science courses in addition to a computer science course (i.e., as an elective). Ultimately, districts retain local decision-making over whether students can substitute.

MATHEMATICS

22. Why does MassCore recommend 4 units of mathematics, including the completion of Algebra II?

Studies show students taking the equivalent of four years of challenging mathematics are more likely to graduate from college. For many students, Algebra II is a key gateway course to completion of a credited college level mathematics course.

23. Is there a recommended mathematics course sequence?

While MassCore does not recommend a sequence of mathematics courses, the [2017 Massachusetts Curriculum Framework for Mathematics](#) represents an opportunity to revisit course sequences in middle and high school mathematics. Districts should work with stakeholders, including middle and high school teachers, guidance counselors, external partners including institutes of higher education and parents/guardians, to examine the full range of courses and sequencing options in light of these revised standards and requirements of higher education and the workforce.

24. Should students take mathematics in their senior year?

Yes. Studies show that such students are more likely to pass their first mathematics course in college, less likely to require remedial coursework that does not carry college credit, and less likely to require re-training by their employers after college.

25. What mathematics courses count toward the MassCore recommendations?

MassCore mathematics courses should be: at the algebra I level and above, meet the definition of a unit, based on the 2017 Massachusetts Curriculum Framework for Mathematics or beyond (for example, college level coursework), and eligible for mathematics high school credit.

26. Can a science course substitute for one of the four mathematics courses?

No.

27. Does a computer science course count as a mathematics course?

Certain computer science courses can substitute for a mathematics course. For details, see the computer science section.

28. Can DESE recommend mathematics options for students to take in their senior year?

Yes. The 2017 Massachusetts Curriculum Framework for Mathematics provides different high school course options for students.

29. Do semester-length electives in statistics or business mathematics in the senior year meet the "four year" mathematics standard?

No. A student must take and pass a "full year of study, or its equivalent *in a specific subject*" to meet the standard of a unit of study as defined in MassCore. It may include a combination of semester courses that equal a full year course.

SCIENCE

30. Why does MassCore emphasize laboratory-based science courses?

Such courses are essential to developing scientific literacy because they provide students opportunities to develop scientific reasoning and inquiry skills while mastering rigorous content, including formulating testable questions, designing investigations, using instruments safely, employing tools and materials to collect and analyze data, and discussing findings.

31. Does a technology/ engineering course count as a science course?

Yes, if the courses align with the appropriate standards in 2016 Science and Technology/Engineering Framework. These courses have an academic focus: students are engaged in conceptual learning of knowledge related to the standards and develop skills related to the engineering design process; they have an experiential, hands-on element (a laboratory component) that enhances student learning of content and process skills; and they develop scientific and technological literacy.

32. Does a computer science course count as a science course?

Certain computer science courses can substitute for a laboratory science course. For details, see the computer science section.

33. Must science courses align to the Massachusetts Curriculum Frameworks? For example, can a school offer a lab-based environmental science course?

This is a local decision. While districts should take the standards under consideration, the standards do not address the full range of possible science offerings, particularly advanced coursework taken as electives.

ADDITIONAL COURSEWORK

34. Must students enrolled in career/vocational technical high school programs take arts and foreign language?

While students enrolled in career/vocational technical high school programs should have the opportunity to complete MassCore, they can fulfill MassCore without taking arts and foreign language. For information about college admissions for students in these programs, refer to the [Undergraduate Admissions Standards for the Massachusetts State University System and the University of Massachusetts](#).

35. Can districts designate students with demonstrated fluency and literacy in language(s) other than English as meeting the MassCore recommendations?

Yes, based on district-determined criteria.

36. Which art classes meet MassCore recommendations?

The course should meet the definition of a unit and be based on the 1999 Massachusetts Arts Curriculum Framework. Generally, the study of the arts includes dance, music, theatre, and the visual arts.

CAREER AND COLLEGE PREPARATION

37. How does MassCore prepare students for STEM careers (science, technology, engineering, and mathematics)?

The demand for workers who can engage in logical and abstract thinking, data analysis, creative problem solving, troubleshooting, and collaboration is continuing to increase dramatically. In response, BESE and BHE voted in June 2018 to include computer science as an option in MassCore. Whether students decide to become full-fledged computer scientists or pursue other STEM careers, computer science knowledge and skills are foundational for a well-rounded education in the twenty-first century.

38. Does MassCore provide flexibility to students seeking to take multiple electives and/or additional coursework to fill specific interests or follow specific career pathways?

Yes. In addition to the recommended core courses, students have the flexibility to take 5 or more additional courses in STEM, arts and humanities, career and technical education, and/or other areas of interest. Further, MassCore outlines the minimum “core” of coursework that most students should take in high school. Districts should provide flexible options and opportunities for students to go beyond MassCore.

39. Does MassCore prepare students for standardized college entrance exams?

The best preparation for standardized pre-college assessments is a rigorous, standards-based course of study, particularly in English and mathematics. MassCore helps this preparation.

ADDITIONAL LEARNING OPPORTUNITIES

40. What additional learning opportunities should students engage in beyond MassCore?

Fulfilling MassCore is just a start. Students should also engage in a full range of additional learning opportunities to learn about careers and contribute to the community they live in. Examples include:

- *Advanced Placement*[®], which lets students take college-level courses while still in high school; 37 AP courses exist in 22 subject areas.
- *Capstones or Senior Projects* are student-directed learning experiences that help them develop, design or create a product, service, system or event to better them for further studies or employment after high school. Strong projects demonstrate skills such as critical thinking, reading comprehension, and effective communication.
- *Dual Enrollment or early college coursework* lets high school students simultaneously earn credits toward a high school diploma and a postsecondary degree or certificate.
- *Online Courses* for high school or college credit help prepare students for success in 21st century work and life. In addition to building important digital literacy skills, online courses provide greater flexibility in what, where, and how students learn, and at what pace.
- *Service Learning* integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities.
- *Work-based Learning*, work experience that connects classroom learning to work. At the highest level, academic and vocational/occupational curriculum are fully integrated with work site experience.
- *Clubs and other student organizations* that line up with students’ interests and provide opportunities to develop leadership and communication skills.
- *Varsity and intramural athletics* build fitness, teamwork, perseverance, responsibility, commitment, time management, and social and emotional health.
- *Part-time employment*, in which students form good work habits and acquire new skills, including communication, interpersonal, and job application and interview skills.



Carolyn Stanford Taylor, State Superintendent

Graduation Requirements, Grading, and Class Promotion

March 26, 2020

The purpose of this document is to provide an overview of state graduation requirements and to provide a brief summary of local authority around this issue, including grading and class promotion. In addition, it provides strategies to deal with the current situation of school closures related to a public health emergency.

Graduation Requirements

The state graduation requirements under [Wis. Stats. 118.33](#) total 15 credits including:

- English - 4 credits,
- Math - 3 credits,
- Science - 3 credits,
- Social Studies - 3 credits,
- Physical Education – 1.5 credits, and
- Health – 0.5 credits (in grades 7-12).

There is also a civics exam required for graduation. ¹

Brief Summary of Local Authority and Actions

The state superintendent encourages school boards to require an additional 8.5 credits selected from any combination of vocational education (career and technical education), foreign languages, fine arts, and other courses. Most districts have graduation requirements that far exceed the state-required 15 credits. These additional credits are at the discretion of local school boards, and can be changed by action of a local school board. Each district determines what requirements are necessary to grant a high school diploma beyond the 15 credits required under state law.

Grading and Class Promotion

Course grades and class promotions are determined by school board policies and not by state requirements. Districts have latitude in determining what grades to award, if any, for coursework, and what coursework is required for credit attainment.

Current School Closure, Changes in Instruction, and Graduation

It is likely in your current senior population you have students who are in the following categories regarding graduation credits:

¹ The Wisconsin Department of Public Instruction has developed [resources](#) to assist you in meeting the civics graduation requirement. Knowing that districts vary in their ability to meet this requirement, we have provided a [form](#) for you to request a waiver if it becomes necessary.

- Students who currently have attained the district graduation requirements, which would include the 15 state-required credits.
- Students who have completed the 15 state-required graduation credits but currently have not completed all the district requirements. Options:
 - a. School boards could decide to modify district policy to grant a high school diploma.
 - b. School boards could determine that coursework completed to-date is sufficient to award credit for the district-required graduation credits.
 - c. Districts could provide additional learning opportunities that students could complete at home to meet district requirements/credits for graduation.
- Students who have not met the minimum 15 state-required graduation credits but were on track to meet those requirements in current coursework had the school year not been suspended. Options:
 - a. School boards could determine that coursework completed to-date is sufficient to award credit for the state-required graduation credits.
 - b. Districts could provide additional learning opportunities that students could complete remotely to meet state requirements/credits for graduation.
 - c. School boards have an option to request a waiver from the state superintendent. School boards could request a waiver from the state-required high school graduation requirements for those students who were on track with current coursework for them to have completed all state-required high school graduation requirements had the school year not been suspended.
- Students who are further behind high school graduation attainment and who would not have been able to meet the state high school graduation requirements with the normal coursework currently taken prior to the end of the 2019-20 school year. Option:
 - a. School boards could provide targeted online resources for these students further behind in coursework attainment or consider summer school opportunities to complete coursework. Districts can get aid for virtual summer school for grades 7-12 if the class meets a graduation requirement. Waivers for this group of students would not be approved.

IDEA Considerations

Graduating with a regular high school diploma or reaching the maximum age of eligibility both result in a termination of a student's eligibility for Individuals with Disabilities Education Act (IDEA) services. Procedurally, the student's Individualized Education Program (IEP) team must meet to review the student's status and issue the appropriate Notice of Graduation (P-3) or Notice of Ending Services Due to Age (P-4) a reasonable time before the student's eligibility is terminated. The local educational agency (LEA) must also provide the student a summary of performance prior to graduation or ending services due to age. As this is an issue of IDEA eligibility, the department recommends LEA's make extra effort to complete these steps in a timely manner.

Some IEP teams may have already provided a Notice of Graduation or Notice of Ending Services Due to Age to certain students. In these instances, LEAs should consider whether IEP teams should be convened to review the student's status in light of the extended school closure.

For more information, contact Tamara Mouw, Director of Teaching and Learning, at tamara.mouw@wi.dpi.gov or 608-266-2364.

New York State Graduation Requirements

Understanding Current New York State Diploma Requirements

To earn a NYS diploma, students must meet credit and exam requirements. These requirements are separate and distinct and do not have to happen simultaneously.

Note: School districts may create diploma requirements in addition to those required by the NYS Education Department (NYSED).

Credit Requirements

This table shows the number of credits required for each subject. It's important to note in most subjects, students choose the courses they want to take to meet the minimum requirements.

	Minimum number of credits
English	4
Social Studies	4
<i>Distributed as follows:</i>	
<i>Global History and Geography (2)</i>	
<i>U.S. History (1)</i>	
<i>Participation in Government (½)</i>	
<i>Economics (½)</i>	
Science	3
<i>Distributed as follows:</i>	
<i>Life Science (1)</i>	
<i>Physical Science (1)</i>	
<i>Life Science or Physical Science (1)</i>	
Mathematics	3
Languages Other than English (LOTE)	1*
Visual Art, Music, Dance, and/or Theater	1
Physical Education	2
<i>(participation each semester)</i>	
Health	0.5
Electives	3.5
Total	22

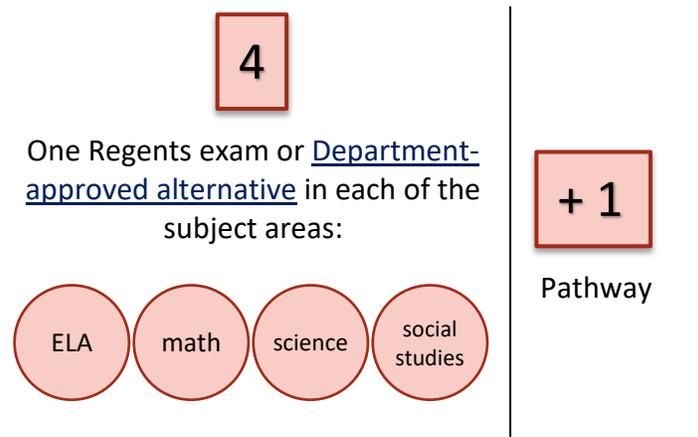
* Students with disabilities may be excused from the requirement for 1 unit of credit in LOTE if indicated on their IEP, but they must still earn 22 units of credit to graduate.



Exam Requirements

In addition to the 22 units of credit, students must also meet the NYS exam requirements to earn a diploma.

To meet the exam requirements, students must pass 4 exams + 1 pathway. All students must pass one exam (Regents exam or Department-approved alternative) in each of the four subject areas (English, mathematics, science, social studies) plus one pathway.



Note: If students are not able to earn a passing score of 65 on Regents exams, they may be eligible for [Appeals](#), [Safety Nets](#), and/or [Superintendent Determination](#). Additional information can be referenced in The [New York State Graduation Requirements: Additional Options](#) flyer.

Pathway Requirements

Multiple pathways allow students choice in the exams they pass to earn a diploma. To complete a pathway, students must:

Arts Pathway	Earn a passing score on a Department-approved pathway exam in the Arts to earn the Arts pathway
CDOS (Career Development and Occupation Studies) Pathway	Complete 216 hours of CTE coursework (about 2 courses) that includes 54 hours of Work Based Learning, complete a career plan and an Employability profile, <u>or</u> pass a Department-approved CDOS pathway exam
CTE (Career and Technical Education) Pathway	Successfully complete a Department-approved CTE program, including 3-5 CTE courses and earn a passing score on the 3-part technical exam
Humanities Pathway	Earn a passing score on one additional Regents exam or Department-approved alternative in English or social studies
LOTE (Languages other than English) Pathway	Earn a passing score on a Department-approved pathway exam in a language other than English
STEM (Science, Technology, Engineering, and Mathematics) Pathway	Earn a passing score on one additional Regents exam or Department-approved alternative in mathematics or science



Diploma Types

There are currently three types of high school diplomas: local, Regents, and Regents with Advanced Designation.

Local

All diploma types require students to earn 22 units of credit as outlined in the credit table. Students who meet the credit requirements and use appeals, safety nets, or Superintendent Determination to meet the exam requirements typically earn a local diploma.

Regents

Students who meet the credit requirements and earn passing scores on all required exams earn a Regents diploma. Students can appeal one Regents exam no more than 5 points below passing (60-64) and still earn a Regents diploma.

Regents with Advanced Designation

Students who meet the credit requirements, earn passing scores on all required exams including 2 additional math and 1 additional science, and complete a sequence in LOTE, the Arts, or CTE, earn a Regents diploma with Advanced Designation.

Resources

- [General Education and Diploma Requirements](#)
- [New York State Diploma Requirements](#)
- [New York State Diploma/Credential Requirements](#)
- [Commissioner's Regulations \(8 CRR-NY §100.5, Diploma Requirements\)](#)

Questions?

Contact the Office of Curriculum and Instruction at emscgradreq@nysed.gov or (518)474-5922