STEM-FOCUSED HIGH SCHOOL GRADUATION OPTIONS

Traditionally, most states had one high school diploma with a single set of high school graduation requirements to attain that diploma. States may have developed policies for a much smaller number of students to achieve a local diploma or another less rigorous option. Increasingly, the graduation landscape is becoming more complicated with more and more states creating multiple ways to attain a high school diploma or add seals or endorsements on top of the high school diploma. Some states are creating options for a high school diploma that put a stronger focus on Science, Technology, Engineering and Mathematics (STEM), sometimes called "STEM pathways" or "STEM endorsements." By developing STEM-focused graduation options, states can send clear signals to students about what they need to be prepared for post-high school opportunities in STEM postsecondary majors or careers.

As a number of states have created these STEM-focused options for students, and more states will make them available in the future, several important policy considerations merit analysis. These include the ways states have designed their STEM graduation options, with a focus on comparing the requirements specific to mathematics and science, and other requirements students must meet to graduate with these options. Additional considerations include how well STEM options align with expectations for college and careers and how states are incentivizing schools and students to respectively offer and complete these options. Of significant importance is the extent to which groups of students, especially historically underserved groups, have equitable access to and are earning these STEM-focused options, and what data is available showing outcomes for these groups.

High School Graduation Requirements for STEM Options

State policies for high school graduation requirements differ in the number of graduation options available to students, as well as the course requirements within each of those options. Some states offer a single option for graduation while others offer a set of options. Across states, graduation options include the standard high school diplomas offered in states as well as additional pathways, credentials, certifications, endorsements, awards, or scholarships that encompass a full complement of coursework and other requirements offered by a state signaling readiness for college or careers. For the class of 2019, 21 states and the District of Columbia offer one option, 15 states offer two options, three states offer three options, seven states offer four options, and four states offer five or more options. This analysis will include options that are not specific diplomas that a high school would confer, but rather are endorsements, seals, or recognition on top of the diploma that are earned by fulfilling an additional set of STEM-focused requirements.

In states with multiple graduation options, there is a standard or default option available to students. These are the set of requirements that students "default" into, as long as they do not opt-in to a different option that has separate (often additional) requirements. Within individual graduation options, the course requirements can differ in the number of courses under each discipline (e.g., mathematics, science, etc.) or in the specificity of courses students must take (e.g., Algebra I, Biology, United States History) to graduate. Achieve has compiled and displayed these graduation requirements for the Class of 2019 in an interactive online data explorer.

STEM graduation options recognize students who opt-in to completing additional requirements focused on mathematics and science. For students in the graduating class of 2019, nine states offered STEM-focused graduation options for students[1]:

- **Alaska** Performance Scholarship – Math and Science Curriculum
- **Colorado** High School Diploma with STEM Endorsement
- **Hawaii** High School Diploma with STEM Honors
- **Idaho** STEM Diploma
- **Michigan** STEM Endorsement
- **Nevada** State Seal of STEM
- **Nevada** State Seal of STEAM (Science, Technology, Engineering, the Arts, and Mathematics)
- **New Hampshire** Scholars STEM Course of Study
- **New York** Regents Diploma with Advanced Designation with Mastery in Math and/or Science[2]
- **Texas** Foundation High School Program with STEM Endorsement

Two states have adopted policies to award STEM graduation options for future graduating cohorts:

- **Ohio** Academic Diploma with STEM Honors (Class of 2021)
- **South Carolina** High School Diploma with STEM Specialization (Class of 2022)

Nine years ago, not a single state conferred STEM-focused graduation options to students. The Alaska Performance Scholarships were first offered to the class of 2011. Students in the New York class of 2013 were first able to earn the Regents Diploma with Advanced Designation with mastery in Mathematics or Science. Hawaii's diploma with STEM Honors and the New Hampshire Scholars STEM Course of Study were first offered to the class of 2016, and Texas first required all students in the class of 2017 to graduate under the Foundation High School Program with endorsements. Colorado passed legislation creating its STEM Endorsement in 2017, and Idaho passed legislation creating its STEM Diploma in 2018. Nevada's STEM and STEAM Seals and Michigan's STEM Endorsement are being offered for the first time for students in the class of 2019. By 2022, eleven states will offer STEM graduation options.

Mathematics Course Requirements

Cross-State Comparison

In eight of the eleven states that offer or plan to offer STEM-focused graduation options, the STEM options require more mathematics courses compared to the default option for students (see Table 1). In five of those eight states, students must take Algebra II or a course at a higher level than Algebra II. In some states—like Idaho, Nevada, and Alaska—the increase in the number of courses does not include specific requirements about which additional courses students need to take, although Alaska does offer a list of courses from which students can choose. The remaining three states where there is no increase in requirements (Colorado, New York, and South Carolina) have additional requirements in mathematics related to assessments and/or the elective courses students may choose to take in a combination of mathematics, science, and technology. Overall, seven of the eleven states, with Colorado, Idaho, Nevada, and New York being the exceptions, require that students take Algebra II or a higher-level course to earn the STEM graduation option.

[1] About a dozen states also offer more general "advanced" or "honors" graduation options that may require additional mathematics or science courses compared to the default option. Those options are not included here because of their broader focus that is not specific to STEM.

[2] New York also offers a STEM Pathway as part of its "4+1" Pathway assessment option. This option is a choice students can pursue under the state's default Regents Diploma. Thus, it is not included in this analysis as a separate STEM-focused graduation option. To earn the 4+1 STEM pathway, students take and pass an additional mathematics or science Regents exam as part of the five required for graduation. More information on the 4+1 Pathways: http://www.nysed.gov/curriculum-instruction/multiple-pathways

College and Career Readiness

Achieve has historically analyzed each of the high school graduation options offered across states and made a determination about whether each option requires students complete a college- and career- ready course of study.[3] These classifications are displayed as part of the online data explorer with each state's options. Across the nine states that currently offer a STEM-focused option, all but Michigan offer a default graduation option with course requirements that do not meet expectations for college and careers. In other words, unless students in those seven states opt-in to taking a more rigorous course of study than the minimum requirements for a high school diploma, such as a STEM-focused option, they could graduate without the skills and knowledge necessary to take credit-bearing postsecondary courses or enter a career path with opportunities for advancement.

Michigan is the only state that offers a STEM option in addition to a default graduation option (Michigan Merit Curriculum) which meets expectations for college and careers. In five of the remaining seven states, with Idaho, Nevada, and Colorado being the current exceptions, the STEM graduation option offered has additional requirements that meet expectations for readiness in college and careers. This key difference between these options and their classifications is a result of the requirements for mathematics among the available STEM graduation options. To earn the STEM options in Alaska, Hawaii, Michigan, New Hampshire, and Texas, students must take and pass mathematics courses that include Algebra II content, or in the case of New York, pass an assessment showing proficiency in Algebra II.

Beginning with the class of 2021, Colorado will require that districts develop graduation requirements that align with the state's college- and career-ready academic standards (which include Algebra II content expectations) and align with the postsecondary and workforce readiness definition adopted by the state. Thus, students earning the state's STEM endorsement on top of the state's default diploma option will also earn diplomas that include college- and career-ready expectations. Additionally, in Ohio, future cohorts of students will be defaulted into a college- and career-ready graduation option while still having the option to pursue a more rigorous, STEM-focused option. Ohio will require students completing both the default and STEM options to take mathematics through Algebra II. South Carolina, which will offer a STEM option for the class of 2022, follows suit with five of the states with STEM graduation options available for the class of 2019 in that the requirements for the STEM-focused option are at the college- and career-ready level, while the default option is not.

Comparison to Postsecondary Admissions Requirements

In a separate analysis, Achieve has also compared the requirements included in states' graduation options with the requirements for admission in two public, four-year universities in each state, to show how well aligned high school exit and postsecondary entrance expectations are among these institutions.[4] This analysis is specific to whether these two sets of expectations align within states, separate from Achieve's own determinations about whether graduation options are at a college- and career-ready level. Among the five STEM graduation options included in this analysis[5] —Alaska, Hawaii, New Hampshire, New York, and Texas—four of the five state STEM options were more clearly aligned to postsecondary admissions requirements in mathematics than the default option offered in those states. In New York, the default and STEM options are both aligned with postsecondary admissions requirements in mathematics.

[3] All states have adopted college- and career-ready standards in mathematics and English language arts, but this does not mean that the states require students to take a course of study that delivers these standards to graduate. States that expect students to complete courses aligned to their college- and career-ready standards most typically require three years of rigorous mathematics to learn the content of the standards – whether in traditional mathematics courses (e.g., two years of Algebra and one year of geometry), capstone experiences, or applied/technical courses with rigorous embedded mathematics – and four years of grade-level English.

[4] A data explorer showing states' graduation requirements compared to postsecondary admissions requirements is available here: https://highschool.achieve.org/postsecondary-explorer

[5] This analysis included options for high school graduation offered by states for the class of 2018, and therefore only the STEM-focused options from Alaska, Hawaii, New Hampshire, New York, and Texas were included.

Table 1: Mathematics Course Requirements[6]

State	Number of Courses Required		STEM Option Course Requirements Description	How STEM Requirements Differ from the Default Requirements
	Default Option	STEM Option		
Alaska	3	4	Four units of credit, chosen from Algebra I, Algebra II, Geometry, Trigonometry, Precalculus, Calculus, Calculus II, and Statistics	One additional credit
Colorado			*See "Other Requirements" below*	No difference in course requirements
Hawaii	3	4	Four credits which must include one credit for Algebra II and one credit beyond Algebra II	One additional credit that must include Algebra II and one credit beyond Algebra II
Idaho[7]	3	4	Unspecified	One additional credit
Michigan	4	6	Five credits must be from a list in state statute, or must cover the same content, and one credit for precalculus or calculus	Two additional credits, including credit for precalculus or calculus
Nevada	3	4	Unspecified	One additional credit
New Hampshire	3	4	Four units, including Algebra I, Algebra II, Geometry, and one other competency	One additional credit, including Algebra II, Geometry, and one other competency
New York	3	3	Three units of credit and a commencement level Regents examination in mathematics designated by the commissioner or an approved alternative	No additional credits. To earn Mastery in Math: Score 85 or better on three Regents mathematics exams. Students earning a standard Regents diploma score 65 or better on one Regents mathematics exam.
Ohio (Class of 2021)	4	5	Five units of mathematics which shall include Algebra I, Geometry, Algebra II, and one other higher-level course, or a four-course sequence that contains equivalent or higher content	One additional credit, including one course that is at a higher level than Algebra II
South Carolina (Class of 2022)	4	4	Algebra I, Geometry, and Algebra II with at least two at the honors level or higher and a fourth honors or above mathematics course with either Algebra II or Integrated Mathematics III as a pre-requisite	No additional credits, but credits must include Algebra II and a higher-level course, and three courses at the honors level
Texas	3	4	Four credits, including Algebra I, Geometry, and Algebra II. The additional credits may be selected from a list of courses included in state regulations	One additional credit which must, at least, also include Algebra II

[6] All state graduation options, including all course requirements and full descriptions for each, are available at https://highschool.achieve.org/data-explorer. Some course descriptions listed here, and in the following Science and Other requirements tables, are summarized or abridged.

[7] Idaho defines course requirements differently than most states. For the purposes of comparison, the number of units required by subject and total number of units required by the state have been halved to align better with how the majority of states define units of credit.

Science Course Requirements

Cross-State Comparison

Of the eleven states that offer a STEM graduation option to students, nine require students to complete more science courses compared to the default option (see Table 2). However, the specific requirements for science courses among the STEM graduation options vary:

- In six states (Colorado, Hawaii, Idaho, Michigan, Nevada, and New York), there is no difference in the specific courses required between the default and STEM options (though some states require more total courses). For instance, in Hawaii, students graduating with the state's default high school diploma and its diploma with STEM Honors are both required to take a Biology course along with other, unspecified science courses.
- Two states (Alaska and New Hampshire), offer a list of courses that could be included as part of the requirements to earn the STEM graduation option, but do not specifically require any of those courses.
- Three states (Ohio, South Carolina, and Texas), require specific, additional science courses and/or more advanced science courses to earn the STEM option. In Ohio, students that will earn the STEM Honors diploma must take an additional science course and must take an additional science course at an advanced level. South Carolina requires students take biology, chemistry, and a third course with biology and chemistry as a prerequisite. Students earning Texas' STEM endorsement must pass chemistry and physics in addition to biology.

Comparison to Postsecondary Admissions Requirements

Similar to mathematics, across the five STEM graduation options included in Achieve's analysis of state high school exit and postsecondary entrance requirements, four of the five state STEM options were more clearly aligned to postsecondary admissions requirements in science than the default option offered in those states. In New York, both the default and STEM options are again aligned with postsecondary admissions requirements in science.[8]

Table 2: Science Course Requirements *(continued on next page)*

State	Number of Courses Required		STEM Option Course Requirements Description	How STEM Requirements Differ from the Default Requirements
	Default Option	STEM Option		
Alaska	2	4	Four units of credit, chosen from Physical Science, Earth Science, Biology, Chemistry, Physics, Marine Biology, and Anatomy and Physiology	Two additional credits, with a list of courses from which to choose
Colorado			*See "Other Requirements" below*	No difference in course requirements
Hawaii	3	4	Four credits, one of which must be in Biology I, equivalent International Baccalaureate (IB) Biology, or Advanced Placement (AP) Biology courses	One additional credit
Idaho	3	4	Unspecified	One additional credit
Michigan	3	6	Four of the six credits must be from a list in state statute, or must cover the same content	Three additional credits

[8] A data explorer showing states' graduation requirements compared to postsecondary admissions requirements is available here: https://highschool.achieve.org/postsecondary-explorer

Table 2: Science Course Requirements *(continued)*

State	Number of Courses Required		STEM Option Course Requirements Description	How STEM Requirements Differ from the Default Requirements
	Default Option	STEM Option		
Nevada	2	4	Unspecified	Two additional credits
New Hampshire	2	4	Four units, including three years chosen from Biology, Chemistry, Physics, and others as approved by individual schools	Two additional credits
New York	3	3	Three units of credit in Life Science (1), Physical Science (1), and Life Science or Physical Science (1)	No additional credits. To earn Mastery in Science: Score 85 or better on three Regents science exams. Students earning a standard Regents diploma score 65 or better on one Regents science exam.
Ohio (Class of 2021)	3	5	Five units of science including two units of advanced science. One single course may fulfill the fifth required credit in both science and mathematics.	Two additional credits, including one additional credit of advanced study
South Carolina (Class of 2022)	3	3	Three units of a lab science including at least one course in biology and one course in chemistry and a third lab science with biology or chemistry as a prerequisite	No additional credits, but additional specificity on required courses, including biology, chemistry, and a third course with biology and chemistry as a prerequisite
Texas	3	4	Four credits, which must consist of Biology or an AP or IB Biology course, as well as chemistry and physics or Principles of Technology. One credit must be selected from: Integrated Physics and Chemistry; Chemistry Physics; Principles of Technology; and an AP or IB science course. The additional credit may be selected from a list provided in state regulations.	One additional credit, which must include chemistry and physics or Principles of Technology

Other Requirements

All STEM-focused graduation options across states include requirements that are in addition to what is required of all graduates (e.g., passing end-of-course assessments). These additional requirements generally fall into one of four categories: 1) meet a score threshold on an assessment; 2) achieve a certain grade point average (GPA); 3) earn additional course credits or a series of courses that are not exclusive to one content area, but could include courses or a combination or courses in mathematics, science, and/or another STEM-related field; and 4) complete a portfolio or capstone project. Some states require that students meet the requirements in two or more of these categories.

1. **Assessment score requirements:** Alaska, Colorado, Nevada, New York, and Ohio all require certain scores on an assessment. Often these are the ACT and SAT college-readiness assessments. Advanced Placement and International Baccalaureate course assessments are an option in some states. New York requires a higher score on additional Regents exams compared to the default diploma option.
2. **GPA:** Colorado, Hawaii, Nevada, New Hampshire, and Ohio all have a GPA requirement that students must achieve.
3. **Additional STEM courses:** Idaho requires that students take 2.5 additional units in any combination of science, technology, engineering or mathematics courses. Similarly, Nevada requires students to take one additional course in computer science, engineering, manufacturing, electronics or a career and technical education program of study in information and media technologies or skilled and technical sciences. South Carolina will require that four of the seven elective courses students must take to graduate must be beyond the required courses in mathematics, science, and technology, with at least two of those courses being at the honors level. Students in Texas must complete a coherent four-course sequence of Career Technical Education (CTE), mathematics, or science courses, or a combination of two of these discipline areas.
4. **Capstone/Portfolio:** Colorado and Hawaii specify completion of a capstone project, which is a longer-term, culminating project that addresses a complex research question or problem and results in a final product or presentation. Similarly, Ohio will require a "field experience and document the experience in a portfolio specific to the student's STEM area of focus."

Table 3: Other Requirements *(continued on next page)*

State	Other Requirements for STEM Graduation Option
Alaska	Obtain a score of 21-25 on the ACT assessment, 1060-1210 on the SAT assessment, or 13 or higher on WorkKeys with no score lower than four
Colorado	• Complete a sequence of four or more STEM courses with a 3.5 GPA or higher on a 4.0 scale or equivalent • Achieve scores set in state statute on the mathematics portions of the ACT or SAT; IB or AP mathematics assessments; the Accuplacer assessment; or the armed services vocational aptitude battery • Complete a capstone project in which the student shows mastery in a set of competencies listed in state statute
Hawaii	• 3.0 GPA or higher • Successful completion of a STEM Capstone Project in a state-approved course
Idaho	2.5 credits in any or all subjects of science, technology, engineering, or mathematics
Michigan	At least one-half credit in technology course work and at least one-half credit in engineering course work. These credits may be gained through separately or in conjunction with mathematics and science courses.

Table 3: Other Requirements *(continued)*

State	Other Requirements for STEM Graduation Option
Nevada	• At least one credit in computer science, engineering, manufacturing, electronics or a CTE program of study in information and media technologies or skilled and technical sciences. • A 3.25 grade point average on a 4.0 grading scale, or a 3.85 weighted grade point average on a state-approved grading scale. • Any one of the following: a score of defined by the state on an AP, IB, SAT Subject Test or ACT assessment in science; a grade of B or higher in a dual enrollment science course; or a score of gold or higher on the ACT National Career Readiness Certificate • Any one of the following: a score defined by the state on an AP, IB, SAT Subject Test or ACT assessment in mathematics; a grade of B or higher in a dual enrollment mathematics course; or a score of gold or higher on the ACT National Career Readiness Certificate. • Students earning the STEM Seal must complete at least one credit in fine arts.
New Hampshire	3.2 GPA or higher
New York	• Mastery in Math: Score 85 or better on three Regents mathematics exams. • Mastery in Science: Score 85 or better on three Regents science exams.
Ohio (Class of 2021)	• 3.5 GPA or higher on a 4-point scale • Complete a field experience and document the experience in a portfolio specific to the student's STEM area of focus or on a topic related to the student's STEM area of focus • A score on the ACT or SAT assessments as defined in state statute
South Carolina (Class of 2022)	• 3.0 GPA or higher • Seven elective credits that must include four elective courses beyond the required courses in math, science, and technology with at least two courses at the honors level or higher, in one area of STEM or across the four areas of STEM
Texas	Complete one of the following: • A sequence of four courses in either: 1) a CTE that consists of at least two courses in the same career cluster and at least one advanced CTE course; or 2) Com-puter science selected from a list in state regulations • Three credits in mathematics by successfully completing Algebra II and two additional mathematics courses for which Algebra II is a prerequisite by selecting courses from a list in state statute • Four credits in science by successfully completing chemistry, physics, and two additional science courses by selecting courses from a list in state statute • In addition to Algebra II, Chemistry, and Physics, complete a coherent sequence of three additional credits from no more than two of the categories or disciplines represented above

Incentivizing STEM Graduation Options: Public Reporting, State Accountability, and Financial Incentives

Public Reporting

More transparent data reporting helps stakeholders see how equitably graduation options are accessed and implemented. Absent public reporting, there is no way for stakeholders to know the extent to which students are meeting the more rigorous expectations of these STEM graduation options, particularly in comparison to the other graduation options available to those students. While states annually report graduation rates for students, most states that offer multiple graduation options do not report how many students earn each option, making it impossible to determine the percentages of all graduates and subgroups of graduates earning other diploma options. Achieve's prior research shows that in 2018, 29 states offered more than one diploma option, but only 10 states publicly reported outcomes by diploma option. And just seven of those 10 states disaggregate that data by most subgroups.

Table 4 details which states publicly report data on their STEM graduation options, and whether that data is disaggregated by racial/ethnic subgroups as well as for special populations (English learners, students with disabilities, and economically disadvantaged students). Four states – Alaska, Hawaii, New York and Texas – report an overall number of how many graduates earned the state's STEM graduation option. And only New York and Texas report data for subgroups completing their state's STEM option for graduation.

Table 4: States' Public Reporting on STEM Graduation Options

State	Outcome Data Publicly Reported?	Data Disaggregated by Subgroups?
Alaska Performance Scholarship - Math and Science Curriculum	Yes*	No
Colorado High School Diploma with STEM Endorsement	No	No
Hawaii High School Diploma with STEM Honors	Yes	No
Idaho STEM Diploma	No	No
Michigan STEM Endorsement	N/A**	N/A
Nevada State Seal of STEM or STEAM	N/A**	N/A
New Hampshire Scholars STEM Course of Study	No	No
New York Regents Diploma with Advanced Designation with Mastery in Math and/or Science	Yes	Yes
Texas Foundation High School Program with STEM Endorsement	Yes***	Yes

** Alaska reports the percentage of students eligible for the Alaska Performance Scholarship as well as those that actually use the scholarship at an accepting in-state institution.*

*** Since 2018-19 is the first year Nevada is offering the STEM and STEAM Seals and Michigan is offering the STEM Endorsement, no data is yet available about percentages of students earning these options.*

**** Texas reports, by grade, the students that are pursuing or completing each endorsement offered in the state as opposed to just those that earn the endorsements at the end of high school.*

Transparent data, disaggregated by subgroup for students completing all graduation options is necessary to make better-informed conclusions about the kinds of options students are completing, and importantly, which groups of students are completing them. In Texas there are significant gaps in those pursuing the state's STEM Endorsement. While 60.1 percent of Asian students complete the requirements for this endorsement, just 31.5 percent of white students, 21.3 percent of Hispanic students, 16.1 percent of black students, 9.8 percent of English learners, and 4.1 percent of students with disabilities do so. However, in New York a relatively low percentage of students overall (3.1 percent) earn the state's Regents Diploma with Mastery in Math and/or Science, and thus the percentages of students in most subgroups earning this option for graduation hover around that percentage: 3.2 percent of white students, 2.4 percent of 3.6 percent of black students, 2.8 percent of Hispanic students, 1 percent of English learners, and 2.4 percent of students with disabilities earn this option.

Students should have equal access to educational opportunities that will better prepare them college or careers, like STEM graduation options. Historically, underserved and marginalized groups of students have lacked access to opportunities like these, which lead to gaps in achievement. Transparent and disaggregated data is a vital first step in thwarting the perpetuation of gaps in access and achievement across student groups.

State Accountability

Another way states can incentivize districts and schools to encourage and support students to complete a STEM-focused graduation option is to formally include a measure in the state's accountability system. New Hampshire and New York both count the number of students pursuing STEM graduation options in their state accountability systems. New Hampshire includes students completing a New Hampshire Scholars Course of Study (either the standard Scholars course of study, or the STEM or arts courses of study) as one of ten requirements through which students can be counted as postsecondary ready as part of the state's college and career readiness metaindicator. New York similarly includes students earning a Regents Diploma with an advanced designation (including with Honors, with Mastery in Math and/or Science Endorsement, or with Technical Endorsement) as one of a number of items schools for which can earn credit in the state's College, Career, and Civic Readiness Index metaindicator.

Student Postsecondary Financial Aid

Alaska and New Hampshire offer STEM options that are administered by or in partnership with higher education entities in the state, and thus there are higher education financial aid incentives tied to them. The Alaska Commission on Postsecondary Education oversees the Alaska Performance Scholarship, which awards scholarships to Alaska students who complete the specified requirements. These scholarships are accepted at a number of Alaska postsecondary institutions.[9] New Hampshire Scholars is administered through a partnership between the New Hampshire College and University Council, the New Hampshire Forum on the Future, the New Hampshire Department of Education, and the National State Scholars Initiative Network. Postsecondary institutions in New Hampshire offer merit scholarships and application fee waivers to students earning this distinction.[10]

Providing STEM Options to Students

Some of states' aims in creating additional ways to earn a high school diploma, or additional requirements on top of a standard diploma, are to more closely tailor students' academic experiences in high school to their aspirations after they graduate and to better prepare students for their post-high school plans. STEM-focused graduation options can help meet these two goals.

By creating policies like these, states can signal to students the content, knowledge, and skills needed to pursue STEM career fields or STEM postsecondary majors. In developing STEM graduation option policies in partnership with higher education institutions and/or with the local business communities, states can create policy alignment and smooth student transitions between high school and postsecondary education and/or the workforce. Some states have already chosen to align incentives for students and schools by creating postsecondary financial aid opportunities for students who complete a STEM graduation option, and by including completion of these options in their accountability systems.

However, states must consider and monitor whether all students in their state have equitable access to these opportunities and in turn are completing these graduation options equitably across demographic groups. To do this, states should build data into their reporting systems about how many students are graduating having completed these options, disaggregated by subgroups, and that data should be publicly reported. Transparent data reporting is needed to help stakeholders know which groups of students have access to and are earning these graduation options. With this information, policymakers, state and local leaders, and advocates can make better-informed decisions, and help all students take advantage of these opportunities and be better prepared for future study and careers in STEM.

[9] https://acpe.alaska.gov/Portals/3/APS/Pubs/Approved-Institutions-and-Programs_01.30.19.pdf
[10] http://www.nhscholars.org/wp-content/uploads/2014/06/NH-Scholars-Scholarships-and-App-Fee-Waivers-20163.pdf

Source Links

Class of 2019 State Graduation Requirements

- Alaska High School Diploma: http://www.legis.state.ak.us/basis/folioproxy.asp?url=http://wwwjnu01.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=%5bGroup+!274+aac+06!2E075!27!3A%5d/doc/%7b@1%7d/hits_only https://education.alaska.gov/regs/filed/4aac_06.075.pdf
- Alaska Performance Scholarship – Math and Science Curriculum: http://acpe.alaska.gov/FINANCIAL-AID/AK-Performance-Scholarship
- Colorado High School Diploma: http://www.cde.state.co.us/postsecondary/graduationguidelines
- Colorado High School Diploma with STEM Endorsement: https://www.cde.state.co.us/postsecondary/gg_diplomaendorsement
- Hawaii High School Diploma and Hawaii High School Diploma with STEM Honors: http://www.hawaiipublicschools.org/TeachingAndLearning/StudentLearning/GraduationRequirements/Pages/Requirements.aspx
- Idaho High School Diploma: https://adminrules.idaho.gov/rules/current/08/080203.pdf (Section 105)
- Idaho STEM Diploma: https://legislature.idaho.gov/statutesrules/idstat/Title33/T33CH5/SECT33-523/
- Michigan Merit Curriculum: https://www.michigan.gov/mde/0,4615,7-140-28753_38924---,00.html
- Michigan STEM Endorsement: http://legislature.mi.gov/doc.aspx?mcl-380-1278d
- Nevada Standard High School Diploma: https://www.leg.state.nv.us/NAC/NAC-390.html#NAC390Sec440
- Nevada State Seal of STEM/STEAM: http://osit.nv.gov/STEM/SB_241/
- New Hampshire Standard High School Diploma: http://www.gencourt.state.nh.us/rules/state_agencies/ed300.html
- New Hampshire Scholars STEM Course of Study: http://www.nhscholars.org/course-of-study/
- New York Regents Diploma and New York Regents Diploma with Advanced Designation with Mastery in Math and/or Science: http://www.p12.nysed.gov/ciai/gradreq/intro.html
- Texas Foundation High School Program and Texas Foundation High School Program with STEM Endorsement: http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074b.html

Requirements for STEM-Focused Options for Future Cohorts and State Default Options

- Ohio High School Diploma: http://codes.ohio.gov/orc/3313.603
- Ohio Academic Diploma with STEM Honors: http://codes.ohio.gov/oac/3301-16
- South Carolina High School Diploma: https://ed.sc.gov/districts-schools/state-accountability/high-school-courses-and-requirements/
- South Carolina High School Diploma with STEM Specialization: https://ed.sc.gov/instruction/standards-learning/feature-boxes/additional-information/sc-diploma-pathways-presentation-2019/

Graduation Option Enrollment/Completion Data

- Alaska: https://acpe.alaska.gov/Portals/3/APS/Pubs/APS_Outcomes_Report_2019.pdf?ver=2019-01-25-133957-453
- Hawaii: http://hawaiidxp.org/quick_data/ccri/ccri_grad_class
- New York: https://data.nysed.gov/downloads.php and https://data.nysed.gov/gradrate.php?year=2018&state=yes
- Texas: https://tea.texas.gov/acctres/comp_annual_biennial_2018.pdf