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NATIONAL TRENDS IN HIGH SCHOOL GRADUATION REQUIREMENTS AND DIPLOMA OPTIONS Considerations for Policy and Practice in Illinois

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Table of Contents

Increasing Expectations for High School Graduates.....	1
Research on Increasing High School Graduation Requirements.....	3
Trends in High School Graduation Requirements.....	5
High School Diploma Options.....	14
Recommendations for Policy and Practice in Illinois.....	18
References.....	23
Recommended Readings.....	26
Appendix A. Arkansas’ Smart Core/Core Informed Consent and Waiver Forms	27
Appendix B. Appendix B: Indiana’s Diploma Options	29

List of Tables and Figures:

Table 1. Minimum High School Graduation Requirements Across the United States.....	7
Table 2. Required Mathematics Courses.....	9
Table 3. Required Science Courses.....	11
Table 4. Required Social Studies Courses.....	12
Table 5. Advanced Designations Offered on States’ Standard Diplomas.....	15
Table 6. Career/Technical Education Diploma Options.....	16
Table 7. Curriculum Recommendations from ACT and HSTW.....	19
Figure 1. Distribution of Total Required Units for High School Graduation.....	6
Figure 2. Distribution of English Units Required for Graduation.....	8
Figure 3. Distribution of Mathematics Units Required for Graduation.....	8
Figure 4. Distribution of Science Units Required for Graduation.....	10
Figure 5. Distribution of Social Studies Units Required for Graduation.....	10

Increasing Expectations for High School Graduates

In an era of increasing globalization, is it essential for the United States to maintain a highly skilled workforce in order to remain economically competitive with other nations. To support this important goal, school districts in Illinois and throughout the United States must provide a rigorous curriculum that holds every student to high expectations, so that high school graduates are adequately prepared for postsecondary training and workforce success. In recent years, higher education institutions across the nation have revised their admissions requirements and have adopted an outcomes-based approach to learning, to ensure that students have the necessary skills to be productive in a knowledge-based economy. Unfortunately, there is a “skills gap” within the U.S. economy, with many young adults lacking the essential workforce skills and work ethic necessary for many occupations that pay middle-class wages (Symonds, Schwartz, & Ferguson, 2011). Because many students graduate from high school with an inadequate knowledge and skills foundation, two of every five students who enroll in postsecondary education are required to complete remedial coursework (Conley, 2010). Increasing the rigor of high school courses and examining the effectiveness of each state’s high school graduation requirements could help reduce the necessity for remediation at the postsecondary level. Additionally, those seeking military or workforce avenues immediately upon high school graduation would have the requisite career readiness to learn new job skills successfully. Thus, enhancing high school graduation requirements is one significant way in which school districts can work to meet these interrelated outcomes.

Numerous educational policy initiatives have been underway throughout the past few decades, with education officials focused on increasing high school rigor and implementing enhanced learning outcomes across the United States. Warning of mediocre academic performance in the nation’s high schools, the National Commission on Excellence in Education (NCEE, 1983) issued a landmark report, entitled *A Nation at Risk*. This task force recommended that high schools require 4 years of English, three years of mathematics, three years of science, 3 years of social studies, and one-half year of computer science;

in addition, it recommended that students work toward foreign language proficiency, beginning in the elementary grades. The NCEE task force report is credited with the birth of the standards movement in the U.S. More recently, the Common Core State Standards Initiative (CCSS) has been supported by 45 states and the District of Columbia (including Illinois), and the Common Core are designed to ensure that students are adequately prepared to enter credit-bearing courses in college or to enter the workforce (CCSS, 2012b, ¶ 2). The CCSS are focused upon increasing English language arts and mathematics outcomes. The mathematics standards call upon all high school students to apply mathematical ways of thinking to real world issues and challenges and to emphasize mathematical modeling (CCSS, 2012c, ¶ 7, 9). Incorporation of the CCSS, in regard to mathematics, is not necessarily a mandate to the states to increase the number of mathematics courses that students are required to complete for graduation, but rather is an intent to make explicit specific outcomes in advanced mathematics for high school students, such as algebraic principles, functions, modeling, geometry, and statistics and probability. Consistent with the Common Core State Standards Initiative’s focus on results over means in mathematics, similar required achievements are outlined in regard to English language arts standards for high school students. Graduates must be able to comprehend as well as critique; cite specific evidence when creating text; use technology and digital media strategically; read broadly from representative works of a “variety of periods, cultures, and worldviews” (to promote empathy and global consciousness); understand audience; and have literacy in history/social science, science, and technical subjects (CCSS, 2012a, ¶ 2). The Next Generation Science Standards, which recently were released, have been internationally benchmarked against highly performing educational systems; 26 states have participated in the development of these science standards (Achieve, 2012a).

The Common Core State Standards Initiative seeks to promote equity; its stated goal is to ensure that “all students, no matter where they live, are well prepared with the skills and knowledge necessary

Increasing Expectations for High School Graduates (continued)

to collaborate and compete with their peers in the United States and abroad” (CCSS, 2012b, ¶ 4). These standards are distinct from previous reform initiatives that allowed each individual state to create its own set of unique standards: The CCSS are the result of an interstate collaborative to yield a commonly adopted, uniform set of expectations across the United States for high school graduates. In recognition of an increasingly globalized context, the CCSS have been internationally benchmarked. The state of Illinois adopted the standards on June 24, 2010, requiring full implementation in Illinois school districts by the 2013-2014 academic year. Currently, 62% of Illinois’ districts with high schools have a CCSS implementation plan in place (Illinois State Board of Education [ISBE], 2013, p. 1). However, only 13.5% of school administrators responding to an ISBE survey reported that their school districts were “completely prepared” for CCSS implementation (p. 1).

Concurrent to conversations related to CCSS, education officials in 35 states, including Illinois, have been engaged in policy conversations through the American Diploma Project (ADP) network. According to Achieve (2013), the state of Illinois has made some progress toward crafting a college- and career-ready policy. Illinois has aligned its high school standards with the expectation of college and careers and developed college- and career-ready assessment systems, but state officials still need to align high school graduation requirements with college- and career-ready expectations, develop P-20 longitudinal data systems, and develop accountability and reporting systems that promote college and career readiness (¶ 2). One goal of the ADP is for participating states to adopt a college- and career-ready curriculum that assures high school graduates are prepared for postsecondary success. Stemming from their ADP involvement, policymakers in several states have elevated their high school graduation requirements, making them significantly more rigorous for all students. Some states also have developed endorsements or industry-recognized credentials that can be attached to diplomas, recognizing students for completing honors course sequences that more effectively prepare them for college and/or careers.

Due to the rapid pace with which numerous states have implemented enhanced high school graduation requirements, it is important to document these revisions across the United States. This data can be beneficial to Illinois policymakers, as they consider potential legislative revisions to graduation requirements. Additionally, Illinois school district administrators and school boards may find this information to be helpful, as they consider changes to their local districts’ graduation requirements and endorsement options for their local diplomas. Thus, this report presents an overview of a study of minimum high school graduation requirements across the nation. In addition to examining changing course requirements, we also reviewed diploma options offered by the various states. After presenting the results of the study, this paper concludes with recommendations for policy and practice in the state of Illinois.



Research on Increasing High School Graduation Requirements

College and Career Eligible vs. College and Career Ready

One issue that has arisen through the a review of high school graduation requirements is the importance of making a distinction between “college eligibility” and “college readiness.” To say that a student is college eligible is to suggest that a student has merely satisfied the listed entry requirements for a given academic institution. In this case, there is no promise of substantive access: Mere opportunity is afforded to the student. Indeed, a growing body of research is concluding that many of the nation’s college students are merely college eligible when they transition into postsecondary education, but they are not college ready. College readiness suggests something far more robust than college eligibility: College readiness entails a lack of need for remediation, the maintenance of college-going habits, and a goal-oriented outlook. Zelkowski’s (2011) distinction between college ready and college eligible is apropos for this study. He asserts that being college eligible is “meeting a state’s minimum high school graduation requirements” but then explains that college readiness refers to “meeting a state’s highly recommended course-taking suggestions, completing rigorous advanced core subject courses during the senior year of high school, and meeting the minimum college entrance scores predicting successful completion of entry-level college core courses” (p. 28). Moving a step further to consider both college and career readiness, in order to have a globally competitive workforce in Illinois and the U.S., high school graduates must complete rigorous career and technical education coursework that adequately prepares them to successfully enter the next phase of their intended careers—whether it be immediate entry into the workforce, joining the military, or continuing into postsecondary education. ACT (2012a) defines college and career readiness as “the acquisition of the knowledge and skills a student needs to enroll and succeed in credit-bearing first-year courses at a postsecondary institution (such as a two- or four year college, trade school, or technical school) without the need for remediation” (p. iii). Approximately 80% of Illinois jobs today require

some form of training beyond high school graduation (Advance Illinois, 2012); however, only 41% of adults in Illinois have attained postsecondary degrees or industry credentials. Through its involvement in Complete College America, Illinois has adopted a goal of increasing the proportion of Illinois adults with a postsecondary degree or credential to 60% by 2025. Attaining this goal will be challenging for P-20 education in Illinois and requires an unrelenting focus on academic rigor. According to Advance Illinois (2012), only one third of Illinois students are academically on track when they enter their high school freshman year. Further, only 71% of entering freshmen graduate from high school, 55% enroll in postsecondary education, and only 29% earn a postsecondary degree (Advance Illinois, 2012). A Peter D. Hart Research Associates/Public Opinion Strategies poll conducted in 2005 found that 72% of non-college going high school graduates reported, in light of increasing societal demands of college and the workforce, that they would have taken more challenging courses in a least one subject in high school (Achieve, 2012b).

Research confirms that many students who enroll in higher education institutions are merely college eligible, and not college ready. Sanoff (2006) surveyed 1,098 college faculty members regarding their perceptions of the college readiness of their students. Only 4% indicated that their students were very well prepared math; at the same time, 32% expressed that their students were not well prepared in math (§ 3). Additionally, 44% reported that their students were not prepared to do college-level writing (§ 2). When asked about their overall perceptions of student readiness for college, 84% stated that high school graduates were either unprepared or only somewhat prepared to pursue a college degree (§ 5). These professors found that their students were “inadequate writers, have trouble understanding difficult materials, fall short in knowledge of science and math, have poor study habits, and lack motivation” (§ 7).

The promotion of college readiness and work readiness, arguably, requires nationwide rigorous

high school curricular expectations (ACT, 2006). Furthermore, all students should have access to a quality curriculum that fully prepares them for college and career success. Some students who spend their high school years preparing for the workplace or military may change their career paths at some future point—whether it is immediately upon high school graduation or after spending time in the military or workforce. Students should be encouraged—indeed, even required—to enroll in a rigorous sequence of coursework so that they have the necessary knowledge and skills for career and/or college success. Furthermore, preparation of students for college and careers “serves as a unifying agenda across the P-20 education pipeline, encompassing, for example, high-quality early education, rigorous career and technical education (CTE) programs, and postsecondary completion goals” (Achieve, 2012a, p. 6).

Concerns about Dropout Rates when Diploma Requirements Increase

Some educators, parents, and policymakers may express concerns that increasing high school graduation requirements may result in the unintended consequence of a corresponding increase in the dropout rate. However, research has determined that enhanced graduation requirements are not related to high school students’ likelihood of dropping out of school in mathematics (Hoffer, 1997; Porter, 1998) or in science (Porter, 1998). In addition, research has confirmed that increasing science and math requirements was positively correlated with higher scores on the National Assessment of Educational Progress (NAEP) for the subgroup of students who completed the minimum number of required units—provided that they completed more advanced courses (Chaney, Burgdorf, & Atash, 1997). Noting that student achievement is related to course content, Chaney et al. (1997) recommended that requirements should be defined “in terms of completing specific courses rather than only specifying the minimum number of years of instruction” (p. 242).

Clearly, simply increasing the minimum number required courses within a subject will not necessarily lead to increased competency, if a student is merely exposed to repeated years of watered-down coursework with no expectations to master more advanced curricular content, or if applications of content are not integrated into the students’ learning experiences. Increasing graduation requirements in one or more subjects automatically will result in graduating seniors earning more credits in those subject areas, but primarily for that subgroup of students who are determined to satisfy only the minimal requirements to earn their degrees (Chaney et al., 1997). Students driven by other factors, such as those seeking to satisfy college admissions requirements, likely will be unaffected by revised high school graduation expectations (Chaney et al., 1997). However, Carlson and Planty (2012) determined that a greater portion of required course credits is earned through the completion of advanced coursework when graduation requirements increase. Because the movement to increase graduation requirements across the country has recently gained steam, research about this topic continues to unfold. Lillard and DeCicca (2001) point out that the effects of graduation requirements will change over time, for “when requirements change, the behavior of students, parents or teachers may change” (p. 470). With sufficient academic support within the school, increasing graduation credit requirements may prove to be positively associated with increasing graduation rates and with enhanced levels of college and career readiness, as research referenced in this report suggests.

Trends in High School Graduation Requirements

In the study highlighted in this report, we analyzed the minimum high school graduation requirements of the 50 states and the District of Columbia (DC), carefully reviewing each state's statutes, state education department administrative rules and regulations, and state education department websites to obtain up-to-date information on graduation requirements. Additionally, we collected information on certificates, credentials, honors designations, and/or endorsements that could be attached to the high school diplomas, when they were formally offered by a state. We interviewed state education department officials to gain clarity when published information appeared to be outdated or did not clearly articulate the state policies, when materials indicated that proposed statutory changes were under consideration by state legislators, and to ensure that our summaries correctly articulated each state's graduation policies and practices. We also compared each state's course requirements for English, science, mathematics, and social studies, to identify specific courses within these disciplines that commonly were mandated across the nation. In this section we present information on current graduation requirements across the United States.

Facilitated through their participation in the American Diploma Project, 23 states and the District of Columbia have implemented rigorous college- and career-ready high school graduation requirements that incorporate the Common Core State Standards since 2004 (Achieve, 2012c). The primary focus of these efforts has been increasing expectations in the disciplines of English and mathematics, but science and social studies requirements also have been elevated in several states. These approaches are designed to eliminate tracking practices that have long been prevalent in American high schools, which leave many of the nation's students, especially those from disadvantaged backgrounds, unprepared for success after high school—assuming that they indeed graduate (Achieve, 2012c). Some interesting approaches have begun to emerge. Fourteen states (Alabama, Arizona, Arkansas, Indiana, Michigan, Mississippi, New Mexico, North Carolina, Ohio, Oklahoma, South Dakota, Texas, Utah, Washington)

require all entering freshmen to automatically enroll in a default college- and career-ready curriculum with rigorous academic expectations, but permit them to opt out of these requirements through a signed parental waiver (Achieve, 2012c). Students who obtain permission to opt out typically are provided either with a minimum diploma option or are allowed personal modifications for individual courses, typically mathematics or science (Achieve, 2012a). Nine states (Delaware, Florida, Georgia, Hawaii, Iowa, Kentucky, Minnesota, Nebraska, Tennessee) and DC have established mandatory course requirements without an opt-out provision; provisions are included to ensure that students with documented disabilities are provided with resource supports to satisfy these increased requirements. Since the purpose of this study was to review the minimum number of units that must be completed to qualify for a high school diploma, we utilized the minimum diploma alternatives for the 14 states with default college- and career-ready curricula.

As background information for Illinois educators and policymakers, the state-mandated minimum high school graduation requirements for Illinois school districts are as follows: 4 units of Language Arts, of which 2 years must be writing intensive courses and 1 must be offered as language arts; 3 units of mathematics (Algebra I and a course containing geometry content must be taken); 2 units of science; 2 units of US History or US History/American Government; 1 unit art, music, foreign language, or vocational education; and 4.75 units physical education (PE), health education, and consumer education. Illinois regulations denote that a unit is considered as the equivalent of one year's study within the course. The state of Illinois permits each local district to adopt local policies regarding whether the 4.75 units of PE, health, and consumer education will be included in the district's total number of required units for graduation (ISBE, 2012). For the purposes of this study, the state of Illinois is considered as requiring a minimum of 16.75 units for high school graduation, so that state-by-state comparisons could be made in a consistent fashion. Enhanced graduation requirements were

Trends in High School Graduation Requirements (continued)

enacted by the Illinois legislature in 2005, with a phased-in implementation process over four years with the above stated requirements effective for entering freshmen in 2008-09 and subsequent academic years. However, Illinois has not mandated a college- and career-ready curriculum.

The minimum of units required for high school graduation for the 50 states and DC are depicted in Table 1. Since the states employ varying definitions of the terms credit and unit, the Illinois definition of unit (one year's study) was used in this analysis, to ensure uniform analyses across the states. This table notes units required for English, mathematics, science, social studies, electives/other required coursework, as well as the total number of units required for graduation. Because the states mandate an array of additional coursework, it was not possible to provide detailed descriptions for each individual state in this table. However, an analysis was conducted to identify courses or disciplines that typically were mandated. The most commonly required additional courses are physical education and health, either as separate or combined course offerings (40 states), and 34 states also require students to earn at least one unit selected from fine arts, foreign languages, or career/technical education. Recognizing the importance of students' identification of career interests, 13 states require students to select courses within a career cluster area or pathway, career/technical education area, or participate in a career exploration course.

As noted in Figure 1, requirements for the high school diploma vary greatly across the nation. On one end of the spectrum are strong local-control states of Pennsylvania and Massachusetts, which currently have no minimum state-mandated minimum course requirements, and Colorado, which requires only 0.5 units. These three states have vested decision-making authority at the school district level, permitting local school board officials to establish their high school graduation requirements. On the other end of the spectrum, Connecticut requires 25 units, New Mexico 24.5, and 13 states (Alabama, Delaware, District of Columbia, Florida, Hawaii,

Missouri, New Jersey, Oregon, South Carolina, Utah, West Virginia) require a total of 24 units. The median number of required units is for the high school diploma is 22, and 27 of the 50 states plus DC require 20 units or more for graduation.

With only 16.75 required units, Illinois has the ninth lowest high school diploma requirements in the US. However, Colorado legislators currently are debating proposed legislation to increase their minimum graduation requirements from 0.5 to a much higher count, and Pennsylvania is likewise working on legislation for the 2013-2014 academic year that would see its minimum graduation requirements rise from 0 to 23 units. It appears that Colorado and Pennsylvania are shifting away from local control provisions, at least as it relates to the high school diploma. Thus, Illinois likely will drop to the seventh-lowest state in terms of graduation requirements during the 2013-2014 school year.

In the following subsections, we note trends in English, mathematics, science, and social studies requirements. Specific course expectations will be noted, as applicable.

Figure 1. Distribution of Total Required Units for High School Graduation

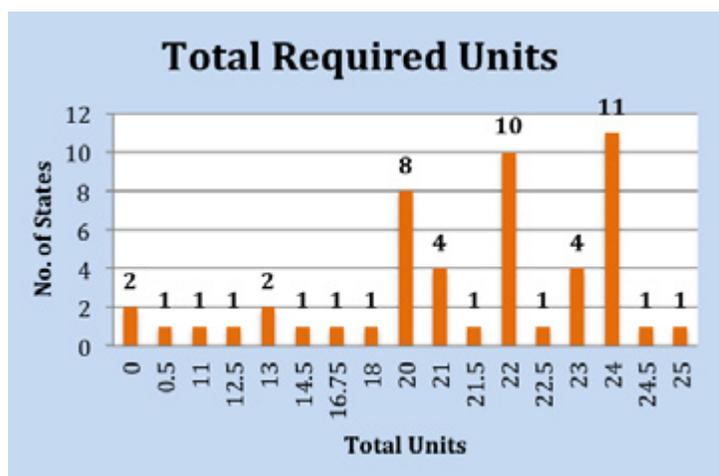


Table 1. Minimum High School Graduation Requirements Across the United States

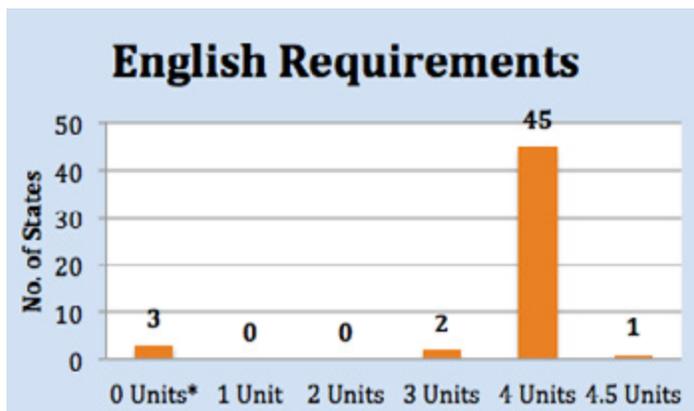
State	Total Required Units	English	Math	Science	Social Studies	Electives/Other	Notes
AK	21	4	2	2	3	10	
AL	24	4	4	4	4	8	
AR	22	4	4	3	3	8	
AZ	22	4	4	3	3	8	
CA	13	3	2	2	3	3	
CO	0.5	0	0	0	0.5	0	Local school board establishes requirements
CT	25	4	4*	3*	3	10	*Math/science must total 8 units
DC	24	4	4	4	4	8	
DE	24	4	4	3	3	10	
FL	24	4	4	3	3	10	
GA	23	4	4	4	3	10	
HI	24	4	4	3	4	8	
IA	14.5	4	3	3	3	1.5	
ID	23	4.5	3	3	2.5	10	
IL	16.75	4	3	2	2	5.75	
IN	20	4	2	2	2	10	
KS	21	4	3	3	3	8	
KY	22	4	3	3	3	9	
LA	23	4	3	3	3	8	
MA	0	0	0	0	0	0	Local school board establishes requirements
MD	21	4	3	3	3	8	
ME	11	4	2	2	2	1	
MI	18	4	4	3	3	3	
MN	21.5	4	3	3	3.5	8	
MO	24	4	3	3	3	11	
MS	21	4	4	3	3	8	
MT	20	4	2	2	2	10	
NC	22	4	3	2	2	11	
ND	22	4	3	3	3	9	
NE	20	4	3	3	3	7	
NH	22	4	3	2	2.5	8.5	
NJ	24	4	3	3	3	11	
NM	24.5	4	4	3	3.5	10	
NV	22.5	4	3	2	2	11.5	
NY	22	4	3	3	4	8	
OH	20	4	4	3	3	6	
OK	23	4	3	3	3	10	
OR	24	4	3	3	3	11	
PA	0	0	0	0	0	0	Local school board establishes requirements
RI	20	4	4	3	3	6	
SC	24	4	4	3	3	10	
SD	22	4	4	3	3	8	
TN	22	4	4	3	3	8	
TX	22	4	3	2	3	10	
UT	24	4	3	3	3	11	
VA	22	4	3	3	3	9	
VT	20	4	3	3	3	7	
WA	20	3	3	2	2.5	9.5	
WI	12.5	4	2	2	3	1.5	
WV	24	4	4	3	4	9	
WY	13	4	3	3	3	0	

Trends in High School Graduation Requirements (continued)

English Requirements

There is uniformity throughout much of the nation in English Language Arts requirements for the high school diploma. Currently, 44 states and DC require a minimum of 4 units of English (Figure 2). The state of Illinois also requires 4 units of English, to include years of writing intensive courses. To ensure that graduates have effective literacy skills, many states are ensuring that the CCSS English Language Arts standards are incorporated into English courses as well as integrated in courses throughout the high school curriculum (Achieve, 2012a). The state of Idaho lists 4.5 units in their English requirements, including one semester (.5 units) of speech. Arkansas requires oral communication (.5 units), and Texas also requires speech (.5 units); thus, these states also technically require 4.5 English units. Colorado, Massachusetts, and Pennsylvania require 0 units of English, while California and Washington mandate a minimum of 3 units.

Figure 2. Distribution of English Units Required for Graduation

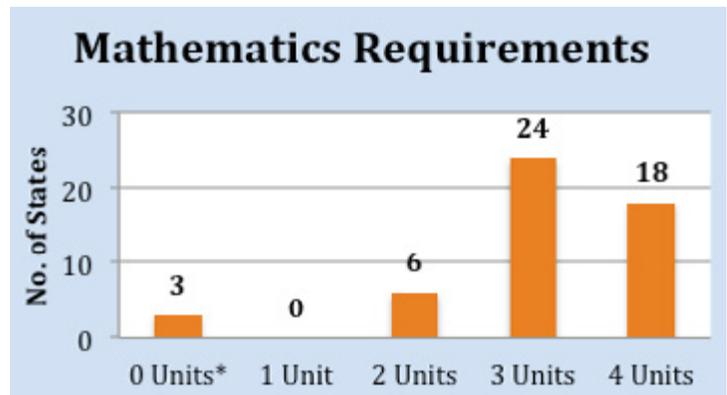


Mathematics Requirements

Significant restructuring has occurred in mathematics requirements in recent years, prompted by the Common Core State Standards movement. In order to meet college/career readiness expectations, students need to master at least three years of rigorous mathematics content through Algebra II/Integrated Math III or equivalent courses (Achieve, 2012c). Thus, many states have significantly increased the number

of mathematics units required for the high school diploma, as well as raising their expectations for students to complete advanced mathematics courses. Seventeen states and DC now require 4 units of mathematics, 24 states require 3 units, 6 states require 2 units, and 3 states require 0 units (Figure 3). The state of Illinois requires 3 units of mathematics.

Figure 3. Distribution of Mathematics Units Required for Graduation



Although the states specify their curricular expectations in different ways, the majority (27 states plus DC) require mathematics content at least through geometry, and many (19 states plus DC) require content through Algebra II or equivalent (Table 2). The state of Minnesota now requires that Algebra I must be completed in the eighth grade. Mathematics content may be delivered through traditional course structures (Algebra I, geometry, Algebra II/Trigonometry) or offered in an integrated format (Unified Math I, II, III or Integrated Math I, II, III). Additionally, math requirements also may be satisfied through career/technical education courses that have rigorous mathematics content embedded within them. Research indicates that students benefit from exposure to mathematics throughout their four years of high school (Achieve, 2008a). Therefore, Kentucky and Tennessee have implemented requirements that mandate mathematics enrollment all four years. Delaware, Idaho, and Michigan require students to enroll in mathematics their senior year, while Indiana requires that a mathematics or quantitative reasoning course must be taken during the junior or senior year. Of the 3 units required in Illinois, 1 unit must be Algebra 1, and 1 must include include geometry content.

Table 2. Required Mathematics Courses

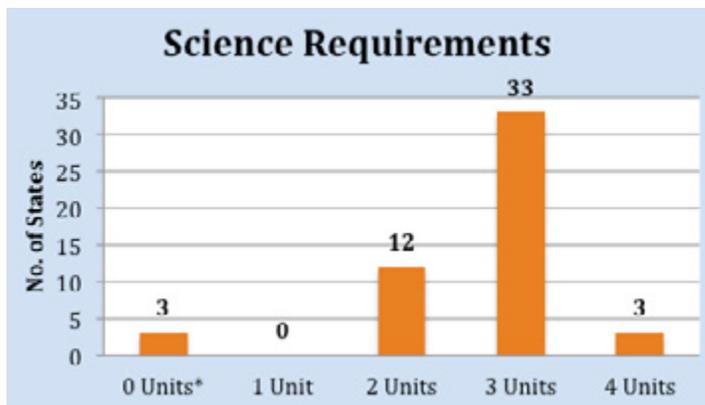
State	Math Units Required	Algebra I/ Equivalent	Geometry/ Equivalent	Algebra II/ Equivalent	Additional Advanced Math	Notes
AK	2					
AL	4	•	•	•		
AR	4	•	•		•	
AZ	4	•	•	•		
CA	2	•				
CO	0					
CT	4*	•	•	•	•	*Must complete 4 math and 4 science or 5 math and 3 science courses, to total 8 units.
DC	4	•	•	•	•	
DE	4	•	•	•		Math course required in senior year.
FL	4	•	•	•		
GA	4	•	•	•	•	
HI	4	•	•			
IA	3					
ID	3					Must have Algebra I and geometry content. Math course required in senior year.
IL	3	•	•			Must have Algebra I and geometry content
IN	2	•				Math course required in junior or senior year.
KS	3					Must have Algebra I and geometry content
KY	3	•	•	•		Must enroll in math courses all four years.
LA	3	•	•			
MA	0					
MD	3	•	•			
ME	2					
MI	4	•	•	•	•	Math course required in senior year.
MN	3			•		Must have Algebra I and geometry content. Must complete Algebra I in eighth grade.
MO	3					
MS	4	•				
MT	2					
NC	3	•				
ND	3					
NE	3					Must have Algebra I and geometry content
NH	3	•				
NJ	3	•	•			Must have Algebra I and geometry content
NM	4			•		
NV	3					
NY	3					
OH	4			•		
OK	3	•			•	Must complete two courses beyond Algebra I.
OR	3	•			•	Must complete two courses beyond Algebra I.
PA	0					
RI	4					
SC	4					
SD	4	•	•	•		
TN	4	•	•	•	•	Must enroll in math courses all four years.
TX	3	•	•	•		
UT	3	•	•	•		
VA	3	•	•	•		Must have Algebra I and geometry content
VT	3					
WA	3					
WI	2			•		Must have Algebra I and geometry content
WV	4					
WY	3					

Trends in High School Graduation Requirements (continued)

Science Requirements

There is greater variation in science requirements across the United States than in English and mathematics. Two states (Alabama and Georgia) and DC require students to complete 4 units for the high school diploma, 33 states require 3 units, 12 states require 2 units, and 3 states require 0 units (Figure 4). The state of Illinois requires 2 science units for high school graduation. Although both science and mathematics are important disciplines—particularly for adequate preparation for STEM (Science, Technology, Engineering, and Mathematics) careers, only 36 states require 3 or more units of science, compared to 42 states that require 3 or more units of mathematics.

Figure 4. Distribution of Science Units Required for Graduation



Twenty-two states and DC require students to complete a course in biology, and 11 states require a physical science course (Table 3). Fourteen states include a requirement that at least one science course must be laboratory-based. Some states have enhanced their expectations to include more rigorous science content of chemistry (2 states), or the choice of either chemistry or physics (5 states). Rather than mandating specific science courses, 8 states permit students to select from an array of course options, while 4 states specify the science content that students must experience without connecting the content to specific course titles. The state of Illinois does not provide any specifications regarding science courses or curriculum content. In addition to traditional science

courses, the required science credits can be satisfied through career/technical education courses, including agricultural education, health, family and consumer sciences, and information technology.

Social Studies

The vast majority of states (32) require 3 units of social studies coursework for the high school diploma. Four states (Alabama, Hawaii, New York, West Virginia) and DC require 5 units, and two states (Minnesota and New Mexico) require 3.5 units. (See Figure 5.) The state of Illinois requires 2 units.

Concerning specific courses that were required for graduation, United States and/or state history is a requirement in 39 states plus DC, United States/state government or civics is required in 34 states plus DC, world history/geography is required in 20 states plus DC, economics is a requirement in 16 states, and geography is required in 3 states. Nine states listed curriculum content that must be addressed in social studies, without naming course titles. Of the 2 required units in Illinois, 1 unit must be the history of the United States or a combination of the history of the United States and American government.

Figure 5. Distribution of Social Studies Units Required for Graduation

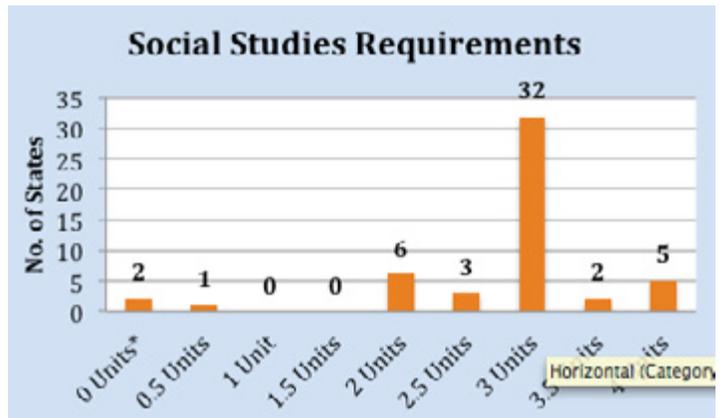


Table 3. Required Science Courses

State	Science Units Required	Physical Science	Life or Applied Science	Biology	Chemistry or Physics	Lab Course	Content Strands/ Course Options	Notes
AK	2							
AL	4	•		•				
AR	3	•		•		•	Course options	
AZ	3		L					
CA	2	•		•				
CO	0							
CT	3*	•	L					*Must complete 4 math and 4 science or 5 math and 3 science (8 units)
DC	4			•		•		
DE	3			•				
FL	3			•	C or P	•		
GA	4			•			Course options	
HI	3			•		•		
IA	3							
ID	3					•		
IL	2							
IN	2			•			Course options	
KS	3					•	Content strands	
KY	3					•	Content strands	
LA	3	•		•				
MA	0							
MD	3			•		•	Course options	
ME	2					•		
MI	3			•	C or P			
MN	3			•	C, P, or CTE		Course options	
MO	3							
MS	3			•				
MT	2							
NC	2		A	•				
ND	3	•		•				
NE	3					•	Content strands	
NH	2	•		•				
NJ	3					•	Content strands	
NM	3					•		
NV	2							
NY	3							
OH	3	•	L					
OK	3			•				
OR	3							
PA	0							
RI	3							
SC	3			•				
SD	3	•		•	C or P			
TN	3			•	C	•		
TX	2			•	C or P		Course options	
UT	3						Course options	
VA	3						Course options	
VT	3							
WA	2					•		
WI	2	•						
WV	3	•		•	C			
WY	3							

Key: A = Applied Science, C = Chemistry, CTE = Career/Technical Education, L = Life Science, P = Physics

Table 4. Required Social Studies Courses

State	Social Studies Units Required	World History	United States/ State History	US Government/ Civics	Economics	Geography	Content Strands
AK	3						
AL	4	•	•		•		
AR	3	•	•	•	•		
AZ	3	•	•	•	•		
CA	3	•	•	•	•		
CO	0.5			•			
CT	3		•	•			
DC	4	•	•	•			
DE	3		•				
FL	3	•	•	•	•		
GA	3	•	•	•	•		
HI	4		•	•			
IA	3		•	•			
ID	2.5		•	•	•		
IL	2		•				
IN	2		•	•			
KS	3						•
KY	3						•
LA	3	•	•	•			
MA	0						
MD	3	•	•	•			
ME	2		•				
MI	3	•	•	•	•		
MN	3.5	•	•	•	•	•	
MO	3		•	•			
MS	3	•	•	•			
MT	2						
NC	2		•	•			
ND	3		•	•	•		
NE	3	•	•	•	•		
NH	2.5	•	•	•	•		
NJ	3	•	•				•
NM	3.5	•	•	•			
NV	2		•	•			
NY	4		•	•	•		
OH	3		•	•			
OK	3		•	•			
OR	3						
PA	0						•
RI	3						
SC	3		•	•	•		
SD	3	•	•	•		•	
TN	3						
TX	3	•	•	•	•		•
UT	3	•	•	•		•	
VA	3	•	•	•			•
VT	3		•				
WA	2.5		•				
WI	3			•			
WV	4	•	•	•			
WY	3		•	•	•		

Trends in High School Graduation Requirements (continued)

Comparing Illinois to National Trends

With only 16.75 total units required for the diploma, the state of Illinois ranks in the bottom 20% when high school graduation requirements are compared across the nation. Considering subject area requirements, Illinois is on equal footing with 43 states and DC in English, which require 4 units. The state of Illinois requires 3 units for math, which is consistent with the requirements of 23 other states. However, 17 states plus DC now require 4 units of mathematics for graduation. Additionally, while Illinois requires Algebra I and geometry content, 19 states plus DC have gone a step further to mandate that students successfully complete three years of mathematics content through Algebra II (or equivalent). In the discipline of science, Illinois requires 2 units, but 33 states require 3 units and 2 states plus DC require 4 units of science. Illinois also provides districts with no guidance regarding content to be included in science courses; in contrast, 32 states plus DC either mandate science content or require specific coursework. Raising expectations even higher, 7 states mandate that their students complete coursework in either chemistry or physics. Illinois requires 2 social studies units for the high school diploma, while 41 states plus DC require more than this amount.

In considering this comparison of Illinois to other states, it is essential to underscore the fact that 14 states have implemented a college- and career-ready curriculum as the default program for all students. Students are only permitted to select a less rigorous sequence of courses if they obtain parental approval, in the form of a signed parental waiver. For this study, we analyzed the minimum graduation requirements of these 14 states, but the reality is that the vast majority of students in these states are enrolled in the college- and career-ready curriculum. Thus, Illinois' high school graduation requirements would place them even further, if the more rigorous curricular requirements of these 14 states had been included in this analysis.

It would be informative to review Illinois students' performance on national assessments, to determine

their preparation for college and careers. According to ACT (2012b), 25% of Illinois 11th-grade students met all College Readiness Benchmarks (CRBs) on the ACT examination in 2012; 65% met the CRBs in English, 47% in reading, 44% in mathematics, and 30% in science. Nationally, although 25% of students met all CRBs in 2012, CRB subgroup scores were slightly higher than Illinois averages. Sixty-seven percent of students nationally met the English CRB, 52% in reading, 46% in mathematics, and 31% in science. Thirty-one percent of Illinois students met no CRBs in 2012 (ACT, 2012b). By subgroups, 62% of Asian, 52% of White, 38% of Pacific Islander, 24% of American Indian, 20% of Hispanic, and 11% of African American students in Illinois met three or more CRBs in 2012. Compared to national averages, Illinois students currently are performing only slightly lower on the ACT CRBs. However, because several states have only recently increased their high school diploma expectations to require more rigorous academic content, particularly in mathematics and science, it is likely that Illinois' ACT performance may not compare as favorably to the national averages in the coming years. Of greater importance, however, are equity concerns regarding the course-taking experiences of student subgroups that traditionally have not performed well academically. If minimum course requirements are increased, then every student is required to complete advanced courses, which arguably should result in increased proportions of students who successfully attain the College Readiness Benchmarks.



High School Diploma Options

According to Symonds et al. (2011), “our current system places far too much emphasis on a single pathway to success: attending and graduating for a four-year college after completing an academic program of study in high school” (p. 24). Although it is projected that nearly two thirds of future job openings in the U.S. will require some postsecondary education (Symonds et al., 2011), one third of projected job openings will not require postsecondary training. Additionally, these projections do not imply that a 4-year degree is needed for every high school graduate. For example, significant numbers of job openings are projected in construction, manufacturing, and natural resources, well-paying fields that require a postsecondary credential but not a college degree (Symonds et al.). Symonds et al. assert that many students drop out of high school and college because they “can’t see a clear, transparent connection between their program of study and tangible opportunities in the labor market” (pp. 10-11). Thus, it is essential that school personnel provide students with opportunities to examine labor market projections and to explore career opportunities, so that they can identify career fields of interest to them. Additionally, school districts must develop both college and career pathways for students, and they must acknowledge that these pathways are not mutually exclusive. Students should not be forced to choose between college or career; instead, they should be encouraged to select a rigorous sequence of courses that adequately prepares them for college and career success.

Some states historically have offered certificates, seals, or endorsements that can be added to the standard high school diploma, which recognize that the graduating senior has exceeded the state’s minimum graduation requirements. These awards may be granted for the completion of advanced coursework, career-technical education (CTE) endorsements, for a high grade point average (GPA), and/or for proficiency on state achievement testing. These enhancements to the diploma can provide guidance to students regarding recommended coursework, such a college-preparatory curriculum or CTE strand of coursework, or they can simply reward

levels of achievement. By offering these options to the diploma, state policymakers can encourage students to go beyond the minimum requirements, completing more rigorous course experiences that more fully prepare them for college and careers. Most importantly, these options assist students with developing programs of study that transition seamlessly into college and careers—acknowledging that their high school coursework serves as the building block for additional training beyond high school graduation. In addition, several states offer IEP/Special Education diplomas for students with disabilities, which have graduation requirements established in each student’s Individualized Educational Program.

At the time of this study, 15 states (Arkansas, California, Colorado, Florida, Hawaii, Indiana, Louisiana, Nevada, New York, North Carolina, Oklahoma, Texas, Virginia, West Virginia, Wisconsin, and Wyoming) offer diploma tiers or formal endorsements that can be attached to the standard high school diploma. However, trends indicate that fewer states are offering these options. This decline is due, in part, to the fact that several states have implemented graduation requirements that embrace high expectations for all: Therefore, because every student is expected to complete a rigorous college- and career-ready curriculum, there is no need for a college-preparatory endorsement onto the standard diploma. For example, Kentucky recently repealed its Kentucky Commonwealth Diploma option in favor of a pre-college curriculum option, and Missouri eliminated its College Preparatory Studies Certificate. Some states have provided pathways within their graduation requirements while only awarding one standard diploma. For example, in addition to its core graduation requirements, West Virginia requires each student to select either a professional pathway (a fourth science unit selected from a listing of approved courses; 2 units in one foreign language; plus one additional units with an Advanced Placement course recommended) or a skilled pathway (4 units from the student’s identified career concentration). The state of Arkansas requires all students to identify a career focus, consisting of 6 units.

High School Diploma Options (continued)

States have taken multiple approaches in creating endorsements to their diplomas. Three states (California, Massachusetts, New York, Wyoming) have created seals, certificates, or endorsements in recognition of students' high scores on state assessments. Some states (Florida and Ohio) provide a designation acknowledging students' successful participation in the International Baccalaureate (IB) Diploma Programme. Others offer honors diplomas, acknowledging that students have completed advanced coursework in a college-preparatory, CTE, or STEM curriculum. Some states also require students to attain any or all of the following for the honors designation, in addition to completing the necessary coursework: minimum GPA, minimum ACT or SAT composite score, or minimum state assessment score. Table 5 lists advanced designations offered by 14 states.

It is informative to highlight the efforts of several states to encourage students' completion of a sequence of CTE coursework and learning experiences that leads to the award of an

industry-recognized credential or certificate. Alabama, Hawaii, Indiana, and Ohio have created CTE honors endorsements for students who earn these credentials while also completing additional advanced coursework, earning a minimum GPA, and/or earned a minimum score on a state or national assessment; thus these endorsement options are listed in Table 5 as advanced designations. Table 6 lists CTE diploma options of 9 states; the additional 5 states listed in this chart award the CTE endorsement but do not require additional advanced coursework or have GPA or state assessment requirements. The trends, however, are not to create two distinct tracks, one for a rigorous college-preparatory curriculum and the second for a less rigorous CTE curriculum. Instead, states are creating opportunities to encourage all students to complete advanced coursework that prepares them adequately for college and career success. Depending upon their career interests, some students may opt for a pre-college curriculum and others may opt for a CTE designation, but both routes should be of equal quality and rigor.

Table 5. Advanced Designations Offered on States' Standard Diplomas

State	Diploma Option
Alabama	Advanced Academic Endorsement, Advanced CTE Endorsement
*California	Golden Seal Merit Diploma
Florida	International Baccalaureate option, Three-year college preparatory program
Hawaii	Academic Honors, CTE Honors, STEM Honors
Indiana	Core 40 Diploma with Academic Honors, Core 40 Diploma with Technical Honors
Kentucky	Pre-College Curriculum
Louisiana	College and Career Diploma
*Massachusetts	Certificate of Mastery (Advanced score on Massachusetts state assessment)
Nevada	Advanced Diploma
New York	Regents Diploma with Honors, Regents Diploma with Advanced Designation (Based on Regents exam scores)
Ohio	Academic Diploma with Honors, International Baccalaureate Diploma with Honors, CTE Diploma with Honors
Texas	Recommended High School Program, Distinguished Achievement Program
Virginia	Advanced Studies Diploma, Seals of Achievement (Governor's Seal, Board of Education Seal, Board of Education's Career and Technical Education Seal, Board of Education's Excellence in Civics Education Seal)
*Wyoming	Advanced Endorsement (Based on advanced performance on standards)

*No additional coursework required; assessment performance

High School Diploma Options (continued)

Examples: Arkansas and Indiana

To may be informative to examine different approaches that states have taken in increasing their expectations for high school graduates. Thus, we have included information containing the diploma options from Arkansas and Indiana. These states are not being presented as models but are simply provided as a means of illustration—to show how selected states have developed alternatives to the standard diploma, which provide pathways for students with varying interests.

Arkansas. The state of Arkansas has implemented a college- and career-readiness curriculum as the default program of studies for all students, termed the Smart Core, which was effective with the graduating class of 2014. In the Smart Core, students are required to complete 4 units of English, 4 units of mathematics (through Algebra II, plus a fourth advanced course), 3 units of laboratory-based science (selected from physical science, biology or applied biology/chemistry, chemistry, physics or principles of technology), 3 units of social studies (civics, world history, U.S. history), oral communications (.5 unit), physical education (.5 unit), health and safety (.5 unit), economics (.5 unit that counts toward either social studies or career focus), fine arts (.5 unit), and a career focus (6 units). In order to be eligible for an Arkansas Academic Challenge Scholarship, graduating students must complete

the Smart Core curriculum, with a minimum 2.50 GPA and a minimum composite score of 19 on the ACT or equivalent. Materials describe the Smart Core curriculum as “the foundation for college- and career-readiness,” and students “should supplement with additional rigorous coursework within their career focus.” Twenty-two units are required for the Smart Core.

The Core Curriculum is the opt-out provision in Arkansas. The number of required units remains at 22, and the number of required units within each subject area is the same for the Core Curriculum and Smart Core. The difference between the two options is in mathematics in science. For the Core Curriculum, while students still must earn 4 units, they must complete Algebra I or equivalent, Geometry or equivalent, with all math units building on the base of algebra and geometry content. One two-year algebra or geometry equivalent may be counted as two units toward the 4-unit mathematics requirement. For the 3 science units, students must complete at least one unit of biology and one unit of a physical science.

The parent or guardian is required to sign an informed consent form, indicating that they have either selected or waived the Smart Core curriculum for the child. The consent forms, which contain the curriculum requirements for each Arkansas diploma option, are included in Appendix A.

Table 6. Career/Technical Education Diploma Options

State	Diploma Option
Alabama	Advanced CTE Endorsement
Colorado	Postsecondary and Workforce Readiness Endorsement
Florida	Three-year career preparatory program
Hawaii	Career/Technical Education Honors
Indiana	Core 40 Diploma with Technical Honors
Louisiana	Career Diploma with Career/Technical Endorsement
New York	Regents Diploma with Technical Endorsement
Ohio	Career-Technical Diploma with Honors
Virginia	Career and Technical Education Seal, Advanced Mathematics and Technology Seal

High School Diploma Options (continued)

Indiana. Similar to Arkansas, the state of Illinois has implemented a college- and career-ready curriculum as the default program for all students. This curriculum is called the Core 40 and is effective for the graduating class of 2016. In Indiana, 40 credits are required for graduation. Two credits are equivalent to one year of study; thus, 40 credits equals 20 units. The Core 40 require 4 units of English, 3 units of math (Algebra I, geometry, Algebra II), 3 units of science (biology; chemistry or physics or integrated chemistry/physics, additional Core 40 science course), 3 units of social studies (U.S. history, U.S. government, economics, world history/civilization or geography/history of the world), 2.5 units of directed electives (world languages, fine arts, CTE), 1 unit of physical education, .05 unit of health/wellness, and 3 units of electives (college and career pathway courses recommended). This information is contained in Appendix B.

Two honors options are offered, which encourage students to complete a curriculum that is even more rigorous than the Core 40. The Core 40 with Academic Honors requires 23.5 units. In addition to completing all Core 40 requirements, students must earn 1 additional Core 40 math unit, 3-4 Core 40 world language units, 1 Core 40 fine arts unit, earn a grade of C or better in all courses counting toward the diploma, and have a GPA of B or better. Additionally, the student must satisfy expectations for taking AP courses and exams, approved dual-credit, IB courses and exams, and/or minimum ACT or SAT scores; this requirement entails six different options, which are fully described in Appendix B. The Core 40 with Technical Honors also requires 23.5 units. To satisfy this honors diploma, students must complete the Core 40 requirements, earn 3 units in a state-approved College & Career Pathway that provides a state approved, industry recognized certification or credential; or pathways dual credits resulting in 6 transcribed college credits, earn a grade of C or better in all courses counting toward the diploma, and have a GPA of B or better. The student must satisfy additional expectations, selecting an option provided within the Core 40 with Academic Honors or earning minimum scores on WorkKeys,

Accuplacer, or Compass assessments (Appendix B).

Similar to the Core 40, the General Diploma requires 20 units, but deviates in several ways. Four units of English are required; 2 units of math are required, including Algebra I or Integrated Mathematics I. Students are required to complete a math or quantitative reasoning (QR) course in their junior or senior year, although the QR course does not satisfy the mathematics requirement. Two science units are required, including biology and .5 unit in either physical science or earth and space science. Two units of social studies are required, including U.S. history (1 unit), and U.S. Government (.5 unit). Students must complete 3 units in a College and Career Pathway, 2.5 flex units (additional college/career pathway courses; cooperative education or internship courses; dual-credit courses; or additional courses in language arts, social studies, mathematics, science, world languages, or fine arts); and 3 units of electives.

The alternative to the Core 40 is the Indiana General High School Diploma, and there is a formal multistep opt-out process. The student, parent/guardian, and counselor (or other staff member who assists in course selection) must meet to discuss the student's progress; the Graduation Plan is reviewed; the parent/guardian determines whether greater educational benefits will be achieved by completing the General or Core 40 curriculum; and, if the decision is to opt-out of the Core 40, the student's course requirements and career/academic sequence are determined. Local school districts may implement additional graduation requirements for all students.

Recommendations for Policy and Practice in Illinois

State education officials are committed to ensuring that every Illinois student, from early childhood education through postsecondary, has access to a rigorous curriculum that is relevant to the knowledge and skills that are needed for workforce success. In order to attain the goal to increase the proportion of Illinois adults with a postsecondary degree or credential to 60% by 2025, it is important for local school board officials and educators of the state's school districts to ensure that the curriculum is of the highest quality. Building upon the findings from this study, several recommendations are presented in this section. State policymakers may wish to review these recommendations, to determine whether Illinois statutes or administrative rules regarding high school graduation requirements should be revised, in order to fully prepare each student for college and career success. Should policymakers decide not to enact changes in graduation requirements, school district officials should consider these recommendations, to determine whether they wish to enact school policies mandating enhanced course requirements for the local district's awarding of the high school diploma. References and additional resource materials are provided at the end of this report, so that policymakers and school officials may access these resources as they deliberate revisions to minimum requirements.

Recommendation 1: Minimum Illinois high school graduation requirements should be increased in mathematics, science, and social studies, with specific curricular content required.

If we are to take seriously the goal of fully preparing high school students for the 21st Century workplace and/or college, then enhancing graduation requirements holds promise for creating a more seamless transition from high school into these various settings (Achieve, 2008b). Over 40 states, including Illinois, have taken steps to align their curricula to meet the current workplace and college readiness demands. Illinois compares favorably in English requirements but ranks below most other states in curriculum content expectations for math, science, and social studies (Achieve, 2008b). Rather

than simply requiring a minimum number of units in these disciplines, specific curriculum content must also be articulated, to ensure that every student completes a rigorous set of curriculum expectations when fulfilling the requirements for the diploma. Specifying curriculum content in high school graduation policies can ensure that those students who seek to satisfy only minimal requirements will not enroll in a watered-down curriculum with minimal content expectations.

In order for Illinois graduates to remain competitive with their peers across the United States, requirements for the Illinois diploma must be increased. At a minimum, all Illinois students should be expected to earn at least 3 units in mathematics, completing curriculum content through Algebra II, or its equivalent. Achieve (2012a) has noted that students must complete at least two years of algebra (or the equivalent), in order to meet the CCSS college-and-career ready standard. Science requirements should be increased to at least 3 units, with expected science content to include a course in biology, chemistry or physics (or equivalent), and at least one other rigorous laboratory course. Approved CTE coursework also could satisfy the expectations of rigorous mathematics and science coursework. Additionally, social studies requirements should be increased to a minimum of 3 units, including rigorous coursework that encompasses United States history and/or government and world history and/or geography. These recommendations contain the minimal levels to which Illinois graduation requirements should be boosted: Even if Illinois were to mandate 4 units of English, 3 units of math, 3 units of science, and 3 units of social studies for the diploma, 18 states and the District of Columbia still would have higher graduation requirements, not including the students in many additional states who complete the college- and career-ready default curriculum. Thus, policymakers should carefully analyze expectations for rigorous student preparation, to ensure that students graduate from Illinois high schools with the necessary knowledge and skills for college and career success. And, should Illinois legislators decide to maintain

Recommendations for Policy and Practice in Illinois (continued)

diploma requirements at their current levels, local school boards have the authority to adopt policies mandating enhanced graduation requirements for their high school students, as is currently the case in the state of Illinois.

Table 7 contains the college preparatory curriculum that is recommended by ACT, as well as the curriculum recommendations from *High Schools That Work*. Both groups suggest that students complete at least three years of mathematics, including rigorous Algebra I, Geometry, and Algebra II; three years of rigorous science, including biology, chemistry, and physics; and three years of social studies. Although not every student who graduates from high school will enroll in college, the recommendations of these groups should be taken into consideration as state policymakers and local education officials consider revisions to graduation policies.

It is not sufficient for the total number of units required in mathematics, science, and social studies to merely be enumerated; curriculum content also must be specified. For example, if the only expectation is for student to earn three units in mathematics, a student can satisfy this requirement simply by completing the equivalent of three years of basic mathematics coursework, essentially repeating the same low-level content from one year to the next. In contrast, a student who earns three units of mathematics in Algebra I, geometry, and Algebra II would have an enriched foundation in mathematics. Research confirms that completing rigorous mathematics content in high school is strongly correlated with college success and “success in the high-performance workplace” (Achieve, 2004, p. 6), particularly for students from disadvantaged backgrounds.

Table 7. Curriculum Recommendations from ACT and *High Schools That Work*

	ACT College Preparatory Curriculum	<i>High Schools That Work</i> Recommended Curriculum
English	4 years	4 years
Mathematics	3 years (rigorous Algebra I, Geometry, Algebra II)	4 years (rigorous Algebra I, Geometry, Algebra II, and higher level math course). Students who complete Algebra I in eighth grade complete an additional four years of math.
Science	3 years (rigorous Biology, Chemistry, and Physics)	3 years of college-preparatory science (Biology, Chemistry, Physics or Applied Physics, Anatomy/Physiology)
Social Studies	3 years	3 years of college-preparatory social studies courses
Additional requirements	Some colleges and universities require other classes as prerequisites for admission, such as two or more years of the same foreign language or courses in the visual arts, music, theater, drama, dance, computer science, etc.	Career or academic concentration (at least 4 courses) in Humanities, Mathematics and Science, or Career/Technical. At least one computer course or demonstrated proficiency in computer technology beyond simple keyboarding.

Sources: Southern Regional Education Board. (2009). *High Schools That Work: An enhanced design to get all students to standards*. Atlanta, GA: Author.

ACT. (n.d.). *Recommended college prep courses*. Retrieved from <http://www.actstudent.org/college/courses.html>

Recommendations for Policy and Practice in Illinois (continued)

Having high expectations for all students is an important social justice issue, because all students should be given access to rigorous course content. Of course, resource supports should be made available, as needed, so that all students will be successful in mastering course content. Finn, Gerber, and Wang (2002) noted that, absent a requirement to enroll in advanced mathematics courses, for some students, “the likelihood that students will learn the material approaches zero” (p. 338). This concern is particularly Finn et al. further explained that, after controlling for socioeconomic status, aptitude, and prior achievement, the relationship between the number of mathematics courses taken and achievement is “essentially the same for black males, black females, white males, and white females” (pp. 338-339).

Rigorous mathematics coursework typically functions as a gatekeeper for science courses, including chemistry and physics, and technology-oriented courses (Finn et al., 2002). Furthermore, when science courses are offered in a sequence, student growth for college and career readiness is greatest in the earliest course, and growth increases with each subsequent course (ACT, 2012c). Federman (2007) found that when states require at least three years of science, there is an associated increase in mathematics and science course completion, and this increase was consistent for both males and females.

Recommendation 2: The state of Illinois should establish a college- and career-ready curriculum as the default curriculum, while establishing a general diploma as an opt-out mechanism for students, with parental permission.

As was noted earlier in this report, 23 states and the District of Columbia already have implemented a college- and career-ready curriculum. Nine states and DC have established mandatory course requirements with no opt-out provisions, while 14 states automatically enroll all students into a default college- and career-ready curriculum with opt-out provisions. Therefore, Illinois officials have an abundance of models that can be used for guidance, as the college- and career-ready curriculum and

general diploma requirements are developed. Curriculum content expectations for English, mathematics, science, and social studies must be carefully considered, to ensure that high expectations are in place, both for the college- and career-ready diploma and the general diploma.

An important concern that currently is not addressed in the literature on college- and career-readiness is the issue of curriculum balance. When requirements increase in English, math, science, and social studies, students will have fewer opportunities to complete coursework in other areas of interest, including taking courses in their identified career pathways or simply completing courses to explore potential areas of career interest or for personal enjoyment. Therefore, school officials should be cognizant of unintended consequences that may occur when additional graduation requirements are implemented, and ensure that students have sufficient flexibility within their school schedules to enroll in CTE coursework and other electives, so that they experience a well-rounded education. Additionally, school districts should be granted the autonomy to determine how content may be integrated throughout the curriculum, in satisfying diploma requirements. For example, school district officials may elect to develop CTE courses that satisfy science and/or mathematics requirements and are aligned with students’ interests in some programs of study.

Establishing the college- and career-ready curriculum as the default option for students establishes high expectations for all—that every student is not only capable but encouraged to complete this curriculum. However, offering the alternative of the general diploma affords an opportunity to tailor the curriculum to the student’s unique learning needs and career interests, provided that a valid rationale is presented to justify the general curriculum for this student. Of course, mechanisms must be established that mandate the involvement of the student, parent(s)/guardian(s), and the school counselor or other staff member, to ensure that all parties understand the potential ramifications of the decision to forego the college- and career-curriculum.

Recommendations for Policy and Practice in Illinois (continued)

Additionally, it is recommended that student and parent(s)/guardian(s) be required to sign an informed consent form, acknowledging that they have been informed of their curriculum options.

Recommendation 3: Illinois can create honors diplomas and endorsements, thereby encouraging and rewarding students who exceed the minimum high school graduation requirements.

Some students—particularly those who are aspiring first-generation college students—may not have parents or relatives who can provide effective career advice and can assist them with making strategic decisions about their high school course selections. Other students may have been content to satisfy the minimum course requirements when only one diploma option was available to them, but they will be motivated to complete more rigorous requirements when the diploma options have been created and when they are rewarded for their efforts. Many students may perceive the diploma tiers as an opportunity to distinguish themselves academically when they apply for admission to colleges and universities, as a tangible demonstration that they have completed advanced programs of study. Various tiers of diplomas should not create different hierarchies for student performance but instead should be developed as honors pathways, which recognize and reward students who exceed the minimum requirements. These options can include college-preparatory pathways and career/technical education pathways. Regardless of their motivation, students will be better positioned for college and career success, when they have completed a rigorous honors curriculum.

Several states have implemented honors diplomas, which can serve as models for the state of Illinois. State and/or school officials will need to identify criteria that students must attain to achieve these designations. Some questions to address include: What additional coursework should be required to attain the honors diploma? Should students be required to complete Advanced Placement or dual-credit courses and the accompanying examinations?

Should a minimum GPA be required? Should students be recognized for high performance on the ACT examination and/or state assessments?

Recommendation 4: Local and state officials should monitor student performance, to ensure that all students are successfully fulfilling the graduation requirements.

A number of policy enforcement mechanisms could be put into place to ensure that schools are creating an academic environment that supports all students. Schools can form data teams and conduct “ongoing, fact-based assessments” of student needs (Youth Transition Funders Groups, 2008, p. 27). Transcript audits could be regularly undertaken to determine whether or not students have indeed completed their respective programs and what issues problems of students may be experiencing that have hindered their academic progress. State and local officials can monitor the proportions of students who are opting out of the college- and career-ready curriculum, as well as the number of students who are completing Advanced Placement courses, dual-credit courses, and are selecting honors diploma options. Additionally, equity audits could be conducted, to determine whether all students, including those from underrepresented groups, are successfully completing advanced courses. Policies can be revised and local practices can be modified based upon this information.

Conclusion

This study and the accompanying recommendations have been made to prompt Illinois' educational policymakers to examine current high school graduation policies and to consider elevating Illinois graduation requirements to ensure that all students complete an academic program that fully prepares them for college and career success. Given that the majority of states either have recently upgraded or are in the process of increasing their course graduation requirements, requirements for the Illinois high school diploma currently lag behind much of the nation. Thus, state policymakers and local school district officials should act immediately, so that the college and career preparation of Illinois students is consistent with that of students across the United States.



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Appendix A: Arkansas' Smart Core/Core Informed Consent and Waiver Forms

SMART CORE INFORMED CONSENT FORM (GRADUATING CLASS OF 2014 AND AFTER)

Name of Student:

Name of Parent/Guardian:

Name of District:

Name of School:

Smart Core is Arkansas's college- and career-ready curriculum for high school students.

College- and career-readiness in Arkansas means that students are prepared for success in entry-level, credit-bearing courses at two-year and four-year colleges and universities, in technical postsecondary training, and in well-paid jobs that support families and have pathways to advancement. To be college- and career ready, students need to be adept problem solvers and critical thinkers who can contribute and apply their knowledge in novel contexts and unforeseen situations. Smart Core is the foundation for college- and career-readiness. All students should supplement with additional rigorous coursework within their career focus.

Successful completion of the Smart Core curriculum is one of the eligibility requirements for the Arkansas Academic Challenge Scholarship. Failure to complete the Smart Core curriculum for graduation may result in negative consequences such as conditional admission to college and ineligibility for scholarship programs.

Parents or guardians may waive the right for a student to participate in Smart Core and to instead participate in the Core curriculum. The parent must sign the separate Smart Core Waiver Form to do so.

SMART CORE CURRICULUM

English – 4 units

- English 9th grade
- English 10th grade
- English 11th grade
- English 12th grade

Mathematics – 4 units

- Algebra I or Algebra A & B (Grades 7-8 or 8-9)
- Geometry or Investigating Geometry or Geometry A & B (Grades 8-9 or 9-10)
- Algebra II
- Fourth Math--Choice of: Transitions to College Math, Pre-Calculus, Calculus, Trigonometry, Statistics, Computer Math, Algebra III or an Advanced Placement mathematics
(Comparable concurrent credit college courses may be substituted where applicable.)

Natural Science – 3 units with lab experience chosen from:

- Physical Science
- Biology or Applied Biology/Chemistry
- Chemistry
- Physics or Principles of Technology I & II or PIC Physics

Social Studies – 3 units

- Civics – ½ unit
- World History – 1 unit
- U.S. History – 1 unit

Oral Communications – ½ unit

Physical Education – ½ unit

Health and Safety – ½ unit

Economics – ½ unit (may be counted toward Social Studies or Career Focus)

Fine Arts – ½ unit

Career Focus – 6 units

By signing this form, I acknowledge that I have been informed of the requirements and implementation of the Smart Core curriculum and am choosing the Smart Core curriculum for my child.

Parent/Guardian Signature

Date

School Official Signature

Date

Appendix A: Arkansas' Smart Core/Core Informed Consent and Waiver Forms (continued)

SMART CORE WAIVER FORM (GRADUATING CLASS OF 2014 AND AFTER)

Name of Student:

Name of Parent/Guardian:

Name of District:

Name of School:

Smart Core is Arkansas's college- and career-ready curriculum for high school students.

College- and career-readiness in Arkansas means that students are prepared for success in entry-level, credit-bearing courses at two-year and four-year colleges and universities, in technical postsecondary training, and in well-paid jobs that support families and have pathways to advancement. To be college- and career ready, students need to be adept problem solvers and critical thinkers who can contribute and apply their knowledge in novel contexts and unforeseen situations. Smart Core is the foundation for college- and career-readiness. All students should supplement with additional rigorous coursework within their career focus.

Successful completion of the Smart Core curriculum is one of the eligibility requirements for the Arkansas Academic Challenge Scholarship. Failure to complete the Smart Core curriculum for graduation may result in negative consequences such as conditional admission to college and ineligibility for scholarship programs.

Parents or guardians may waive the right for a student to participate in Smart Core. By signing this Smart Core Waiver Form, you are waiving your student's right to Smart Core and are placing him or her in the Core Curriculum.

CORE CURRICULUM

English – 4 units

- English 9th grade
- English 10th grade
- English 11th grade
- English 12th grade

Mathematics – 4 units

- Algebra I or its equivalent
 - Geometry or its equivalent
 - All math units must build on the base of algebra and geometry knowledge and skills.
- ** A two-year algebra equivalent or a two-year geometry equivalent may each be counted as two units of the four (4) unit requirement.

Science – 3 units

- At least one unit of Biology
- At least one unit of a physical science

Social Studies – 3 units

- Civics – ½ unit
- World History – 1 unit
- U.S. History – 1 unit

Oral Communications – ½ unit

Physical Education – ½ unit

Health and Safety – ½ unit

Economics – ½ unit (may be counted toward Social Studies or Career Focus)

Fine Arts – ½ unit

Career Focus – 6 units

By signing this form, I acknowledge that I have been informed of the requirements and implementation of the Smart Core curriculum and am choosing to waive the Smart Core curriculum for my child. I understand the potential negative consequences of this action as outlined on this form.

Parent/Guardian Signature

Date

School Official Signature

Date

Appendix B: Indiana's Diploma Options

Indiana General High School Diploma

The completion of Core 40 is an Indiana graduation requirement. Indiana's Core 40 curriculum provides the academic foundation all students need to succeed in college and the workforce.

To graduate with less than Core 40, the following formal opt-out process must be completed:

- The student, the student's parent/guardian, and the student's counselor (or another staff member who assists students in course selection) must meet to discuss the student's progress.
- The student's Graduation Plan (including four year course plan) is reviewed.
- The student's parent/guardian determines whether the student will achieve greater educational benefits by completing the general curriculum or the Core 40 curriculum.
- If the decision is made to opt-out of Core 40, the student is required to complete the course and credit requirements for a general diploma and the career/academic sequence the student will pursue is determined.

Course and Credit Requirements (Class of 2016 & Beyond)

English/Language Arts	8 credits
	Credits must include literature, composition and speech
Mathematics	4 credits
	2 credits: Algebra I or Integrated Mathematics I 2 credits: Any math course General diploma students are required to earn 2 credits in a Math or a Quantitative Reasoning (QR) course during their junior or senior year. QR courses do not count as math credits.
Science	4 credits
	2 credits: Biology I 2 credits: Any science course At least one credit must be from a Physical Science or Earth and Space Science course
Social Studies	4 credits
	2 credits: U.S. History 1 credit: U.S. Government 1 credit: Any social studies course
Physical Education	2 credits
Health and Wellness	1 credit
College and Career Pathway Courses Selecting electives in a deliberate manner to take full advantage of college and career exploration and preparation opportunities	6 credits
Flex Credit	5 credits
	Flex Credits must come from one of the following: <ul style="list-style-type: none"> • Additional elective courses in a College or Career Pathway • Courses involving workplace learning such as Cooperative Education or Internship courses • High school/college dual credit courses • Additional courses in Language Arts, Social Studies, Mathematics, Science, World Languages or Fine Arts
Electives	6 credits Specifies the minimum number of electives required by the state. High school schedules provide time for many more elective credits during the high school years.

40 Total Credits Required

Schools may have additional local graduation requirements that apply to all students



Effective beginning with students who enter high school in 2012-13 school year (Class of 2016).

Course and Credit Requirements

English/ Language Arts	8 credits Including a balance of literature, composition and speech.
Mathematics	6 credits (in grades 9-12) 2 credits: Algebra I 2 credits: Geometry 2 credits: Algebra II <i>Or complete Integrated Math I, II and III for 6 credits. Students must take a math or quantitative reasoning course each year in high school.</i>
Science	6 credits 2 credits: Biology I 2 credits: Chemistry I or Physics I or Integrated Chemistry-Physics 2 credits: any Core 40 science course
Social Studies	6 credits 2 credits: U.S. History 1 credit: U.S. Government 1 credit: Economics 2 credits: World History/Civilization or Geography/History of the World
Directed Electives	5 credits World Languages Fine Arts Career and Technical Education
Physical Education	2 credits
Health and Wellness	1 credit
Electives*	6 credits <i>(College and Career Pathway courses recommended)</i>
40 Total State Credits Required	

Schools may have additional local graduation requirements that apply to all students
 * Specifies the number of electives required by the state. High school schedules provide time for many more electives during the high school years. All students are strongly encouraged to complete a College and Career Pathway (selecting electives in a deliberate manner) to take full advantage of career and college exploration and preparation opportunities.

12-07-2012

CORE40 with Academic Honors *(minimum 47 credits)*

For the **Core 40 with Academic Honors** diploma, students must:

- Complete all requirements for Core 40.
- Earn 2 additional Core 40 math credits.
- Earn 6-8 Core 40 world language credits (6 credits in one language or 4 credits each in two languages).
- Earn 2 Core 40 fine arts credits.
- Earn a grade of a "C" or better in courses that will count toward the diploma.
- Have a grade point average of a "B" or better.
- Complete one of the following:
 - A. Earn 4 credits in 2 or more AP courses and take corresponding AP exams
 - B. Earn 6 verifiable transcribed college credits in dual credit courses from the approved dual credit list.
 - C. Earn two of the following:
 1. A minimum of 3 verifiable transcribed college credits from the approved dual credit list,
 2. 2 credits in AP courses and corresponding AP exams,
 3. 2 credits in IB standard level courses and corresponding IB exams.
 - D. Earn a combined score of 1750 or higher on the SAT critical reading, mathematics and writing sections and a minimum score of 530 on each
 - E. Earn an ACT composite score of 26 or higher and complete written section
 - F. Earn 4 credits in IB courses and take corresponding IB exams.

CORE40 with Technical Honors *(minimum 47 credits)*

For the **Core 40 with Technical Honors** diploma, students must:

- Complete all requirements for Core 40.
- Earn 6 credits in the college and career preparation courses in a state-approved College & Career Pathway and one of the following:
 1. State approved, industry recognized certification or credential, or
 2. Pathway dual credits from the approved dual credit list resulting in 6 transcribed college credits
- Earn a grade of "C" or better in courses that will count toward the diploma.
- Have a grade point average of a "B" or better.
- Complete one of the following.
 - A. Any one of the options (A - F) of the Core 40 with Academic Honors
 - B. Earn the following scores or higher on WorkKeys: Reading for Information – Level 6, Applied Mathematics – Level 6, and Locating Information–Level 5.
 - C. Earn the following minimum score(s) on Accuplacer: Writing 80, Reading 90, Math 75.
 - D. Earn the following minimum score(s) on Compass: Algebra 66, Writing 70, Reading 80.



OCCRL's Mission

OCCRL researchers study policies, programs, and practices designed to enhance outcomes for diverse youth and adults who seek to transition to and through college to employment. OCCRL's research spans the P-20 education continuum, with an intense focus on how community colleges impact education and employment outcomes for diverse learners. Results of OCCRL's studies of pathways and programs of study, extending from high school to community colleges and universities and to employment, are disseminated nationally and internationally. Reports and materials are derived from new knowledge captured and disseminated through OCCRL's website, scholarly publications, and other vehicles.

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