



**BLUEPRINT**  
FOR MARYLAND'S FUTURE

Blueprint for Maryland's Future:  
**College and  
Career Readiness**

**Roadmap to Implementation**

February 2022



MARYLAND STATE DEPARTMENT OF EDUCATION

**Mohammed Choudhury**  
State Superintendent of Schools

**Deann Collins, Ed.D.**  
Deputy Superintendent

**Larry Hogan**  
Governor

MARYLAND STATE BOARD OF EDUCATION

**Clarence C. Crawford**  
President, Maryland State Board of Education

Charles R. Dashiell, Jr., Esq. (Vice President)

Shawn D. Bartley, Esq.

Gail Bates

Chuen-Chin Bianca Chang

Susan J. Getty, Ed.D.

Vermelle Greene, Ph.D.

Jean C. Halle

Dr. Joan Mele-McCarthy

Rachel L. McCusker

Lori Morrow

Brigadier General Warner I. Sumpter (Ret.)

Holly C. Wilcox, Ph.D.

Kevin Bokoum (Student Member)

## Table of Contents

---

Executive Summary .....	3
Background and Introduction .....	4
Section 1: CCR Standard.....	12
Section 2: Curriculum Alignment and Changes .....	20
Section 3: Assessments .....	38
Section 4: Post-CCR Pathways.....	41
Section 5: Student Support Pathway.....	50
Section 6: Early Warning Indicators .....	58
Section 7: Coordination and Engagement.....	64
Proposed CCR Timeline Revision.....	66
Report Update Status .....	67

# Executive Summary

*The Blueprint for Maryland's Future* was passed by the 2021 Maryland General Assembly session and now serves as the Maryland State Department of Education's driving force for making significant and lasting changes in its transformation to a world-class instructional system to improve the overall quality of education in Maryland. It presents an extraordinary opportunity and a pledge that all of Maryland's over 910,000 students will receive an excellent and equitable education, especially those who have been historically underserved. To fully implement *The Blueprint*, the Maryland State Department of Education is determined to engage diverse stakeholders, researchers, and subject-matter experts to ensure all new policies and innovative approaches are in alignment with each of the five key policy areas.

Policy Area 1	•Early Childhood Education
Policy Area 2	•High-Quality and Diverse Teachers and Leaders
Policy Area 3	•College and Career Readiness
Policy Area 4	•More Resources for Student Success
Policy Area 5	•Governance and Accountability

**Figure 1.** Shows the five key policy areas that comprise Maryland's education law, *Blueprint for Maryland's Future*, passed in 2021. Policy Area 3 is the focus of this report update.

This report presents an update on the preparation for implementing Policy Area 3: College and Career Readiness, which reimagines what today's students must know and be able to do by the end of the 10th grade. *The Blueprint* establishes what will be the standard that signifies a student is college and career ready. Once a student is designated as meeting or exceeding the CCR standard, they choose which of three equally challenging Post-CCR pathways they want to pursue. For students who need additional support to meet the CCR standard, they will receive these customized individualized supports.

Transforming a state education system involves many different contributors. MSDE has begun engaging key stakeholders to review current and historical state assessment data, national student performance data compared to state performance data, and innovative, evidence-based practices. Additionally, MSDE will continue to compare current state and local practices that have proven effective or may need to be updated or replaced.

Through the input of key stakeholders, MSDE has identified guiding principles for the implementation of a new CCR system, grounding in:

- Moving beyond using standardized test scores as the only measure of CCR
- Equitable access to Post-CCR Pathways
- Post-CCR Pathways should enable students to explore elective enrichment and academic opportunities

# Background and Introduction

## By The Numbers: A Look at State Academic Data

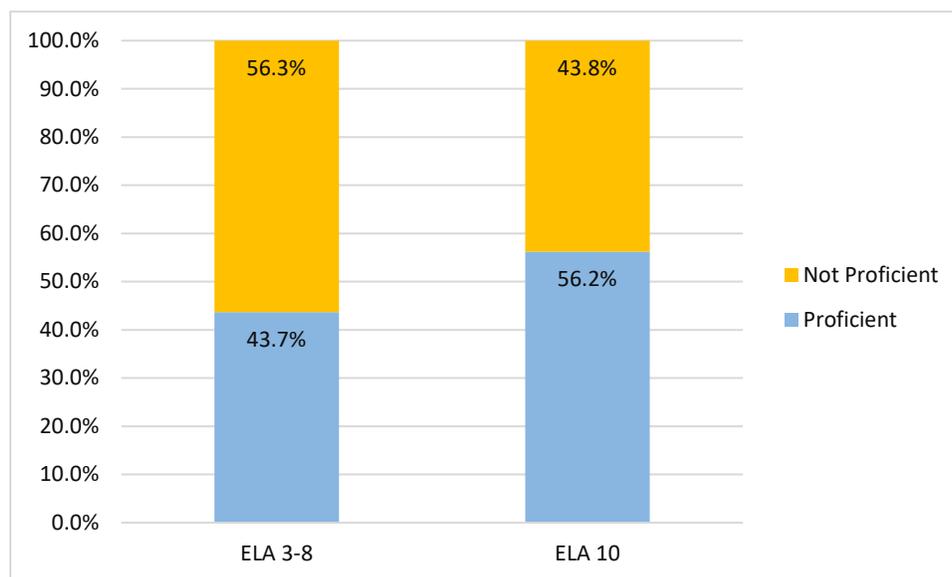
Student achievement, graduation rate, and postsecondary enrollment data for Maryland students, especially for underserved student populations, signal the need to rethink how we prepare our students to succeed in and through college and in their careers. Standardized assessments, including the Maryland Comprehensive Assessment Program (MCAP) and the Partnership for Assessment of Readiness for College and Career (PARCC) measure student learning and communicate whether students meet or exceed grade level expectations for the Maryland College and Career Ready Standards for English language arts and mathematics.<sup>1</sup> Since 2015, the scores achieved in these standardized assessments, graduation rates, and postsecondary college enrollment have been used to assess students' progression towards postsecondary success and areas of needed improvement.

### STUDENT ACHIEVEMENT DATA: STATE STANDARDIZED TESTS

From 2015-2019, annual PARCC scores assessed student learning and served as standardized data sources for school systems and schools to identify and to provide interventions or enrichment to students based on grade level content.<sup>2</sup>

In 2019 less than half of students in grades 3-8 English language arts scored proficient and just over 50 percent met the College and Career Ready Standard by grade 10. Figure 1 shows the percentage of students who scored "proficient," defined as scoring a level 4 or 5, out of 5 performance levels, on the English Language Arts/Literacy PARCC exams.

**Figure 1: English Language Arts Proficiency Rates by Grade Level, PARCC 2019**



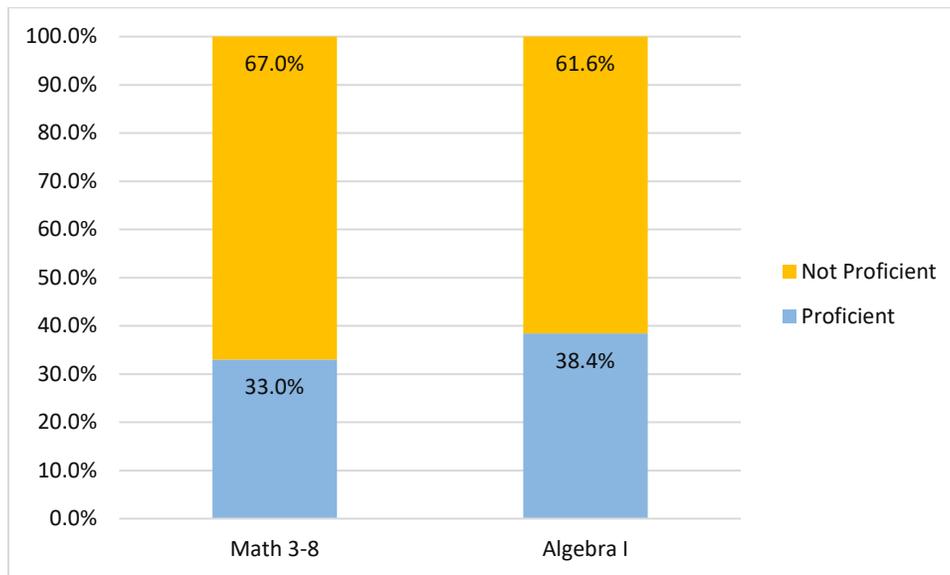
Note: ELA 10 proficiency rates only include first time test takers.

<sup>1</sup> Maryland College and Career Ready Resources <https://marylandpublicschools.org/programs/Pages/MD-CCRS/index.aspx>

<sup>2</sup> Additional data and information not included in this discussion is available on MSDE's website. For a complete understanding of Maryland students' performance on standardized assessments, please see: <https://marylandpublicschools.org/stateboard/Documents/08272019/TabD-MCAP.pdf>

Less than 40% of students at all grade levels met the standard for proficiency in math in 2019. Figure 2 shows the percentage of students who scored proficient, defined as performance level 4 or higher (out of 5 levels), on the PARCC Mathematics exams.

**Figure 2: Mathematics Proficiency Rates by Grade Level, PARCC 2019**



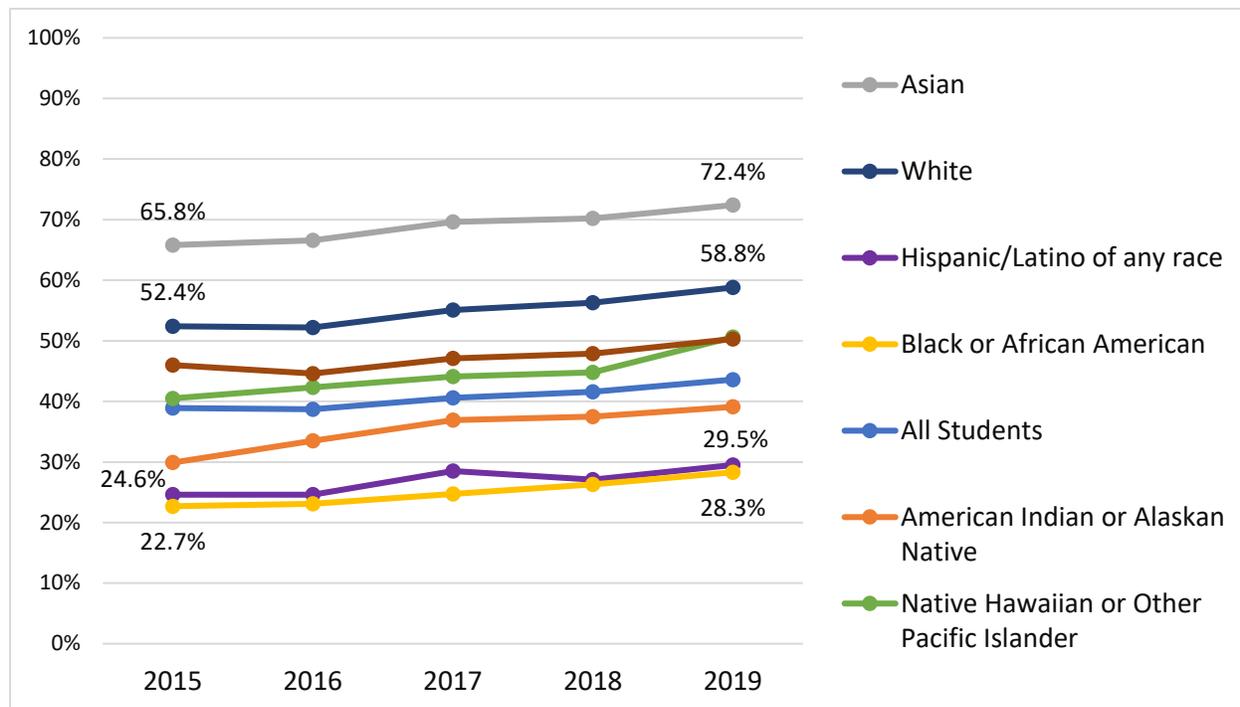
Note: Algebra I proficiency rates only include first time test takers.

Beginning in the 2020-2021 school year, Maryland implemented the MCAP assessment program. Students were first assessed in the fall of 2021 (rather than at the close of the prior school year). This Early Fall 2021 data showed an even further decline in student proficiency in English and math. While Maryland's overall results reflect similar trends seen nationally, MCAP proficiency rates of 35% in English Language Arts and 15% in mathematics for grades 3-8 are alarming.<sup>3</sup> English results show almost a nine-percentage point decline from 2019, while mathematics results indicate an 18-percentage point decline, or less than half of the 2019 rate.

State assessment data also shows large disparities in performance between student groups. For example, in 2019, 72.5% of Asian students scored "proficient" on PARCC tests in English in grades 3-8, compared to 58.8% of White students, 29.5% of Hispanic/Latino students, and 28.3% of Black/African American students. The differences in the proficiency between the groups with the highest and lowest rates has largely remained constant from 2015 and persist despite any overall gains in achievement throughout the state over the same period of time. Disaggregated data by race/ethnicity for PARCC results is illustrated by Figure 3.

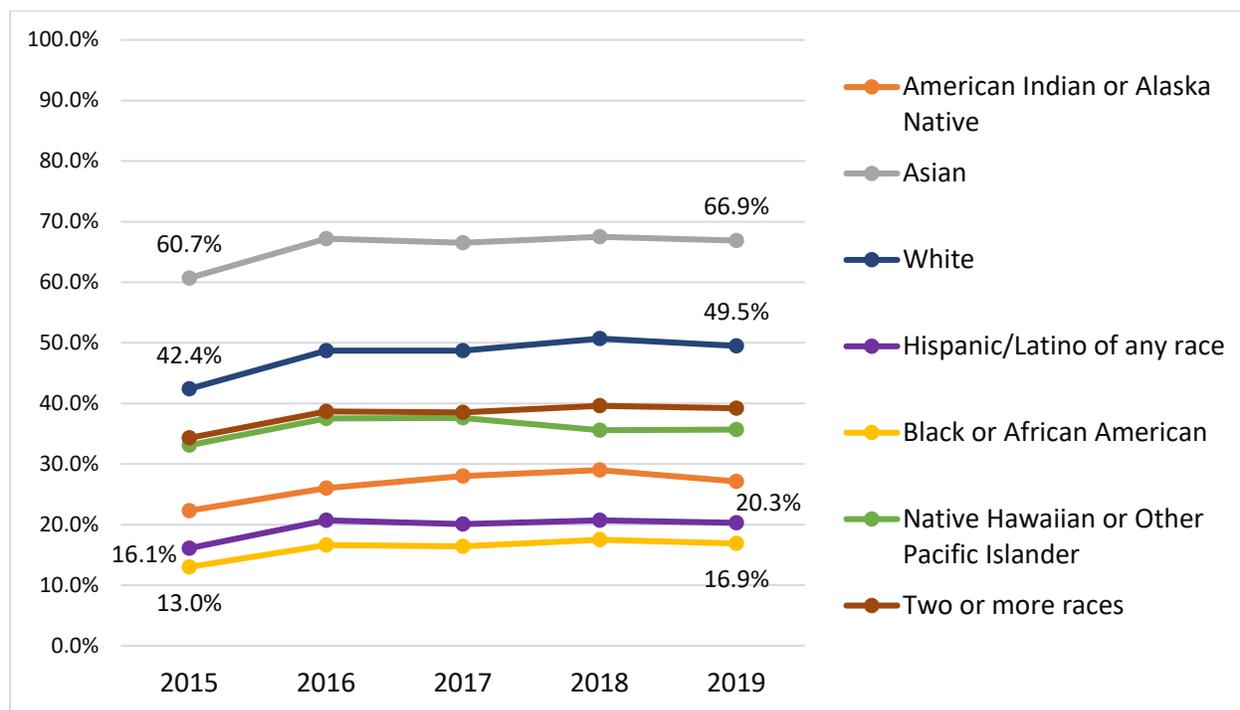
<sup>3</sup> Press Release, December 8, 2021. Maryland Early Fall Assessment Data and Kindergarten Readiness Results Reflect National Trends on Learning Loss. <https://news.maryland.gov/msde/maryland-early-fall-assessment-data-and-kindergarten-readiness-results-reflect-national-trends-on-learning-loss/>

**Figure 3: Percent of Students at Performance Level 4 or Higher by Race/Ethnicity, PARCC 2015-2019, ELA 3-8**



Mathematics data show a similarly concerning trend. Figure 4 shows a gap of approximately 50 percentage points in the proficiency rates between the highest and lowest performing groups in math grades 3-8.

**Figure 4: Percent of Students at Performance Level 4 or Higher by Race/Ethnicity, PARCC 2015-2019, Math 3-8**

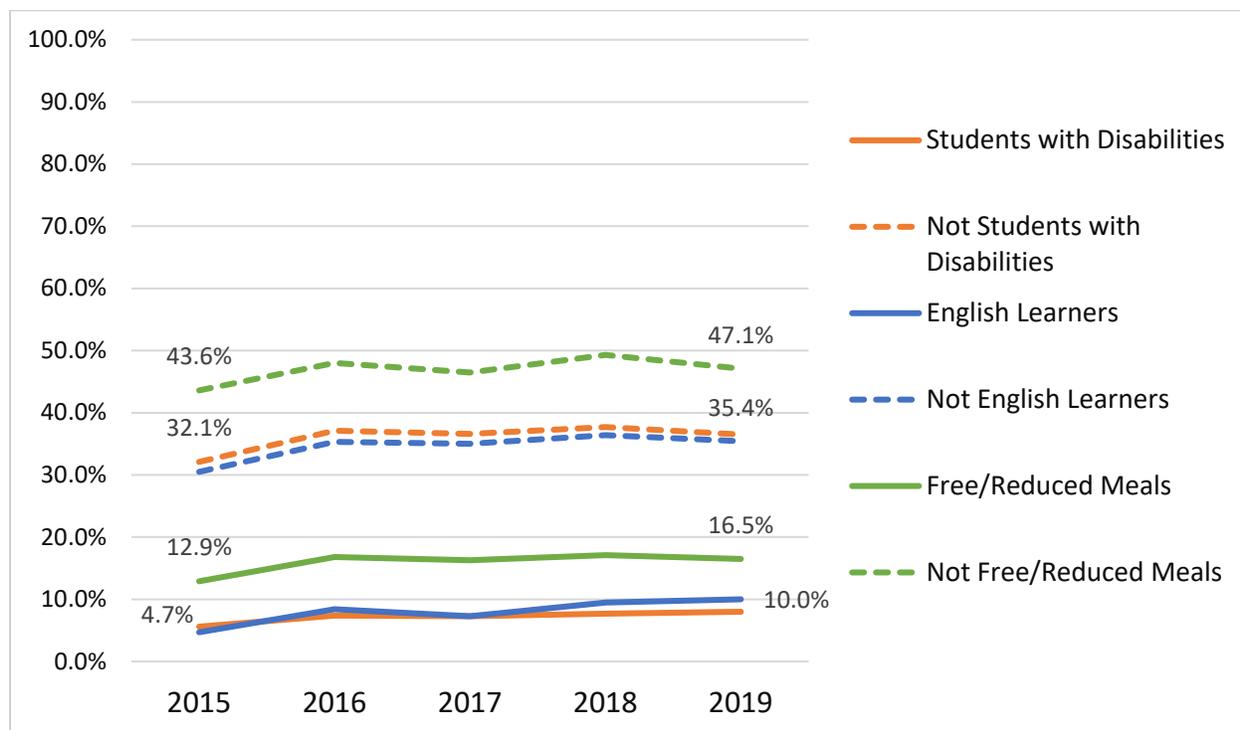


The lack of progress and persistent differences between student groups also appear when looking at student service groups (Figure 5). For example, 2019 PARCC assessment data in grades 3-8 showed that

16.5% of students eligible for free or reduced price meals achieved a performance level of 4 or higher, while 47.1% of students not receiving free or reduced price meals achieved the same performance levels.<sup>4</sup> This 30-percentage point difference in proficiency rates has largely remained constant from 2015 to 2019.

Figure 5 also shows low proficiency rates and persistent differences between student groups for students with disabilities and students who are English learners. Assessment data in English language arts for grades 3-8 and for high school assessments in Algebra I and English 10 illustrate similar themes.

**Figure 5: Percent of Students at Performance Level 4 or Higher by Student Service Group, 2015-2019, Math 3-8**

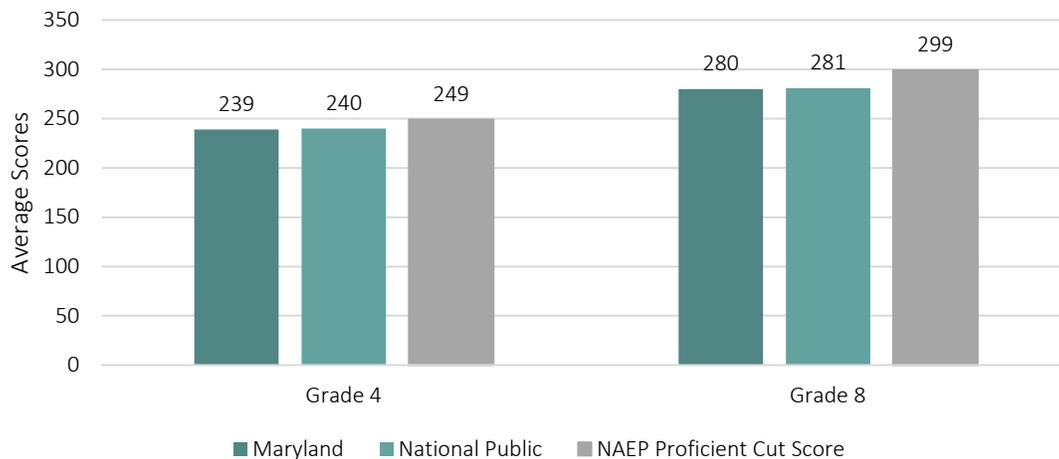


<sup>4</sup> Maryland State Board of Education meeting shared publicly available presentation: 2019 Maryland Comprehensive Assessment Program (MCAP) PARCC English Language Arts (ELA) and PARCC Math Results. <https://marylandpublicschools.org/stateboard/Documents/08272019/TabD-MCAP.pdf>

## MARYLAND'S PERFORMANCE ON NATIONAL ASSESSMENTS

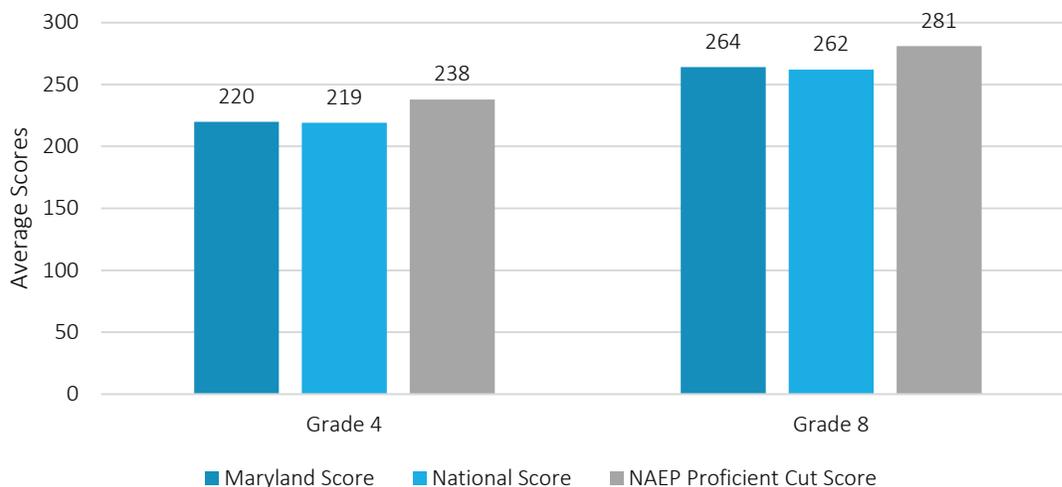
While the MCAP can be used to describe the degree to which each student has mastered the expected knowledge and skills associated with grade level Maryland content standards, it does not provide any information on how Maryland is performing compared to the rest of the nation. The National Assessment of Educational Progress (NAEP)<sup>5</sup>, administered every two years in each state, allows for a national comparison by using a representative sample of 4<sup>th</sup> and 8<sup>th</sup> grade students' knowledge and skills in math and reading. The most recent administration of the NAEP from 2019 showed 4<sup>th</sup> and 8<sup>th</sup> grade Maryland students, representing schools sampled throughout the state, performed similarly to the national average, yet substantially lower than the proficiency cut score.<sup>6</sup> Figures 6 and 7 provide a snapshot of this data.

**Figure 6: NAEP Math average scores and proficiency cut score, 2019**



Note: The difference between the average Maryland score and the average score for all national public school students is not statistically significant.

**Figure 7: Average NAEP Reading scores and proficiency cut score, 2019**



Note: The difference between the average Maryland score and the average score for all national public school students is not statistically significant.

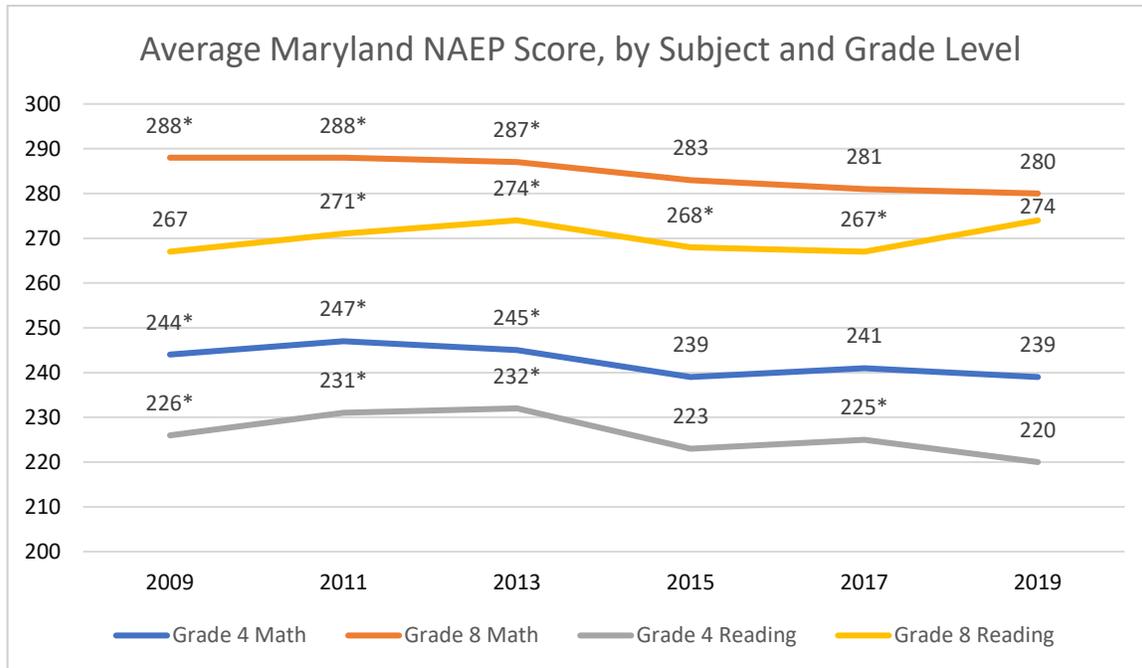
<sup>5</sup> National Assessment of Educational Progress.

<https://www.nationsreportcard.gov/profiles/stateprofile?chort=1&sub=MAT&sj=&sfj=NP&st=MN&year=2019R3>

<sup>6</sup> The difference between the average NAEP score for Maryland that for the entire nation is not statistically significant.

Even though the average score for Maryland students is comparable to the nation, Maryland's performance on the 4<sup>th</sup> and 8<sup>th</sup> grade reading and math NAEP over the last ten years illustrates a troubling trend (Figure 8). With the exception of Grade 8 Reading, average NAEP scores in Maryland in 2019 were at their lowest points in at least a decade. Maryland's average Grade 4 Math score in 2019 was 6 points lower than in 2009, Grade 8 Math was 8 points lower, and Grade 4 Reading was 6 points lower.

**Figure 8: Average Maryland NAEP scale scores by grade level and subject from 2009 to 2019**



\*Indicates the average score was significantly different (p<.05) from 2019.

While NAEP does not provide numerical rankings of each state's performance, Maryland's performance on the test can be distinguished statistically from jurisdictions scoring significantly higher and significantly lower. Figure 9 shows that in 2019, the number of jurisdictions that performed significantly higher than Maryland was greater than the number of jurisdictions that performed significantly lower in both Grades 4 and 8 Math, while, in Reading, a similar number of jurisdictions scored higher and lower than Maryland in Grade 4 and more than twice as many jurisdictions scored lower than scored higher in Grade 8.

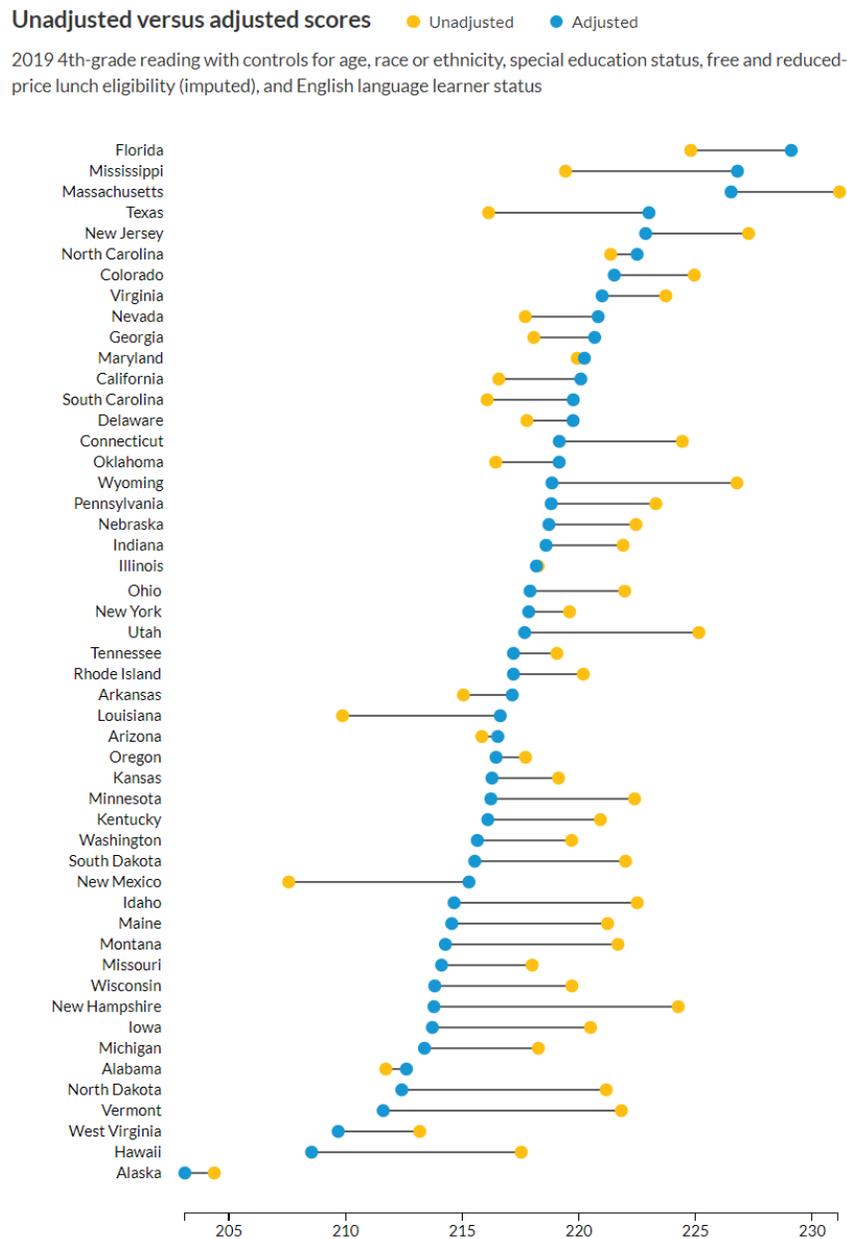
**Figure 9: Relative performance of Maryland on the 2019 NAEP, by grade level and subject**

	# of jurisdictions that performed significantly higher than MD	# of jurisdictions whose performance was not significantly different from MD	# of jurisdictions that performed significantly lower than MD
Grade 4 Math	16	27	9
Grade 8 Math	22	14	16
Grade 4 Reading	9	34	8
Grade 8 Reading	7	28	16

Note: Data include all 50 states, Washington, DC, Department of Defense Education Activity, and Puerto Rico. NAEP does not provide national rankings of jurisdictions because the average scores of many states are not statistically different than those just above or below them.

While NAEP does not account for student demographics in published results, demographics are also an important consideration. The Urban Institute publishes adjusted NAEP scores which account for demographic differences across students in each state, rather than comparing states with vastly different student populations. The adjustments include factors such as race, receipt of special education services, and status as an English language learner. Their analysis underscores the importance of considering student characteristics along with performance. The states that “break the curve” under this analysis are the states that perform better than demographically similar states. These analyses show that a student’s demographics, and the state’s demographic population, must be considered and addressed in all aspects of teaching, learning, and the greater school environment.<sup>7</sup>

**Figure 10: NAEP scores adjusted for demographics**

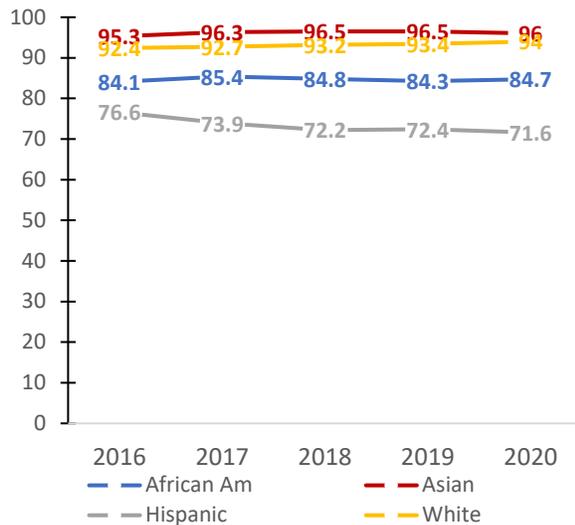


<sup>7</sup> Matthew Chingos, “Breaking The Curve: Promises And Pitfalls Of Using NAEP Data To Assess The State Role In Student Achievement,” Urban Institute (October 2015). <https://www.urban.org/research/publication/breaking-curve-promises-and-pitfalls-using-naep-data-assess-state-role-student-achievement>

### Graduation Rate Data

Trend data of four-year high school graduation rates from 2016 to 2020 shows large gaps across student groups in Maryland. Figure 11 shows the graduation rate of the two largest race/ethnicity student groups by population and Figure 12 shows the graduation rate for English learner students.

**Figure 11: Four-year Adjusted Graduation Rate Among Student Groups: 2016-2020**



**Figure 12: Four-Year Graduation Rate for English Learners: 2016-2020**

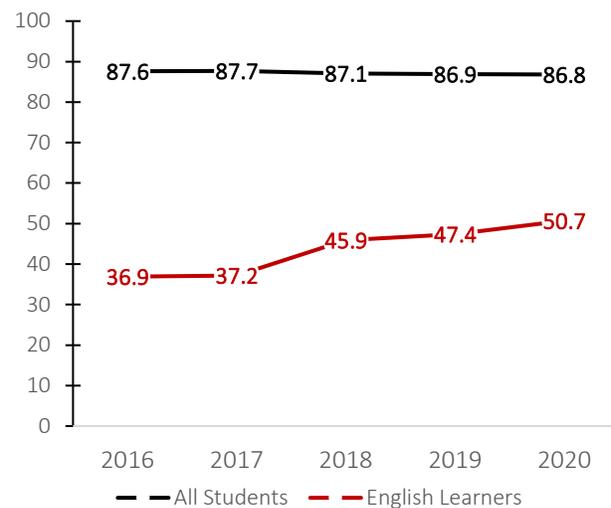


Figure 11. Shows a comparison of Maryland's four-year graduation rate for African American, Asian, Hispanic, and White student group populations. Figure 12. Shows a comparison of Maryland's four-year graduation rate for all students compared to English learners. Source: Maryland Report Card, graphs generated by the MSDE.

### Postsecondary Data

Maryland postsecondary data is collected to show the percentage of high school graduates who enroll in a college level course after high school graduation. Disaggregated data is collected for all student groups including all races and ethnicities, students receiving special services, and by gender.

**Figure 13: College Enrollment (Within 12 Months) Trend Data, 2016-2019**

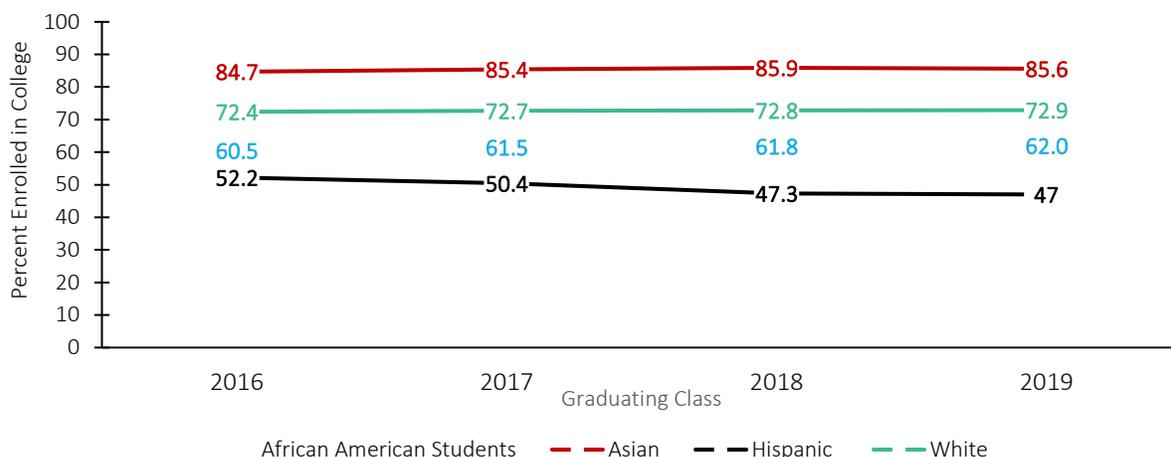


Figure 13. Shows percentage of African American and Hispanic who enrolled within 12 months after graduating from high school. Source: Maryland Report Card, graph generated by the MSDE.

# Section 1: CCR Standard

---

The Maryland State Department of Education is committed to implementing the *Blueprint for Maryland's Future* so that each student enrolled in public school, regardless of the student's race, ethnicity, gender, zip code, socioeconomic status, or the language spoken at home, meets the CCR standard by the end of the 10th grade. *The Blueprint* calls for a clear definition of a college and career readiness standard and a system of assessments that ensure students are reaching their goals and receiving the support needed.

## CURRENT COLLEGE AND CAREER READINESS STANDARD

*The Blueprint for Maryland's Future* has a central goal of ensuring that all Maryland public school students are College and Career Ready before graduation, thus signifying an ability to transition successfully to postsecondary coursework at a two- or four-year institution or to the workforce. All instruction and assessments in public schools should work toward this goal of preparing students to be ready for college and career. To actualize this vision, the standard of what it means to be college and career ready needs to be defined and then set as the north star for PreK-12 education. *The Blueprint* set the preliminary CCR standard to be measured by meeting or exceeding the content standards (earning a score of 4 or 5 on the PARCC) on high school assessments.

The Maryland State Board of Education (SBOE) will reinforce this standard with a policy that starting in the 2021-2022 school year, students are considered college and career ready when they have met or exceeded a metric in both English and Math:

- **English** - College and Career Ready metrics
  - English 10 assessment
    - Score 4 or 5 on the PARCC
    - Score 2 or 3 on Early Fall MCAP (September 2021)
    - Score 3 or 4 on Fall Block and Spring MCAP (December – January or March – May)
- **Mathematics** - College and Career Ready metrics
  - Algebra I, Algebra II, or Geometry assessment
    - Score 4 or 5 on the PARCC
    - Score 2 or 3 on Early Fall MCAP (September 2021)
    - Score 3 or 4 on Fall Block and Spring MCAP (December – January or March – May)
  - Score of 520 on the Math SAT

*The Blueprint* also directs MSDE to contract with an external research organization to conduct an empirical study of the skills, knowledge, and abilities needed to succeed in the first year of Maryland community college coursework. The research study should then determine whether the College and Career Readiness standard set by the State Board of Education aligns with and accurately identifies which students have gained the requisite knowledge to succeed in community college. It should be noted that career readiness includes the demonstration of requisite academic, technical, and employability skills.<sup>8</sup> The study should also test any additional indicators of readiness, and further study the alignment between Maryland College and Career Ready Standards and currently adopted content standards required by postsecondary institutions

---

<sup>8</sup> Advance CTE: State Leaders connecting Learning to Work. <https://careertech.org/>

and industry. Finally, the study should examine top-performing educational systems throughout the world and consider potential sources of bias in assessments used to determine college and career readiness. If necessary, based on the results of the research study, MSDE will propose revised CCR standards to the State Board of Education for approval.

## COMMISSION OF RIGOROUS RESEARCH STUDIES

To fulfill the requirements of *The Blueprint*, it is necessary to determine the alignment of Maryland's CCR standards against national and international best practices and to consider potential sources of bias. MSDE is commissioning two separate research studies to define and verify the CCR standard and how it will be measured. The studies will address the long-term necessity of ensuring alignment of the components of the CCR standard and the assessments, as well as the short-term necessity of ensuring current high school students are prepared to succeed in college.

*The Blueprint* legislation articulates requirements for the research organizations completing these studies of the CCR standard; however, with the additional context from other research and best practices together with internal expertise, MSDE is expanding the scope of work agreements to prepare Maryland students to succeed. Statute dictates that the study must:

- Determine the levels and types of literacy in reading, writing, and mathematics that are needed to succeed in entry-level courses and postsecondary training offered at community colleges in the state
- Examine top-performing educational systems throughout the world, comparing these systems to the education offered in the state
- Consider potential sources of bias in any proposed assessments and strive to eliminate any potential bias in a proposed CCR modification

### Study One: Exploratory Study

MSDE has partnered with the Maryland Assessment Research Center (MARC) at the University of Maryland to complete a short-term quantitative study to explore the relationship between high school state and national standardized tests, and other potential predictors of success measured in high school (such as course grades), and actual success in postsecondary coursework and/or workforce outcomes.

The completion of the study process will result in a measure that best predicts whether a student is ready for college and career, without a disproportionate impact on any particular student group. Meeting this college and career readiness standard should be achievable through multiple methods that allow individual students to demonstrate their skills based on their strengths. To enable Maryland to build these other methods, the research study will evaluate the alignment and predictive abilities of:

- State standardized tests for high school students
- National standardized test scores (SAT and ACT)
- Local assessments
- Performance-based assessments
- High school course grades in math, ELA, and science, and high school GPA
- "Concentrator" status for career and technical education (meaning a student has completed two or more courses in a program of study)
- Successful completion of a career and technical education apprenticeship
- Earned industry-recognized credentials as part of a career and technical education program of study

- Other measures that the community colleges use for placement decisions (could include AP, IB, and dual enrollment course and assessment results)

Students should also be able to demonstrate success in higher education through multiple methods. This component is especially important as *The Blueprint* dictates that all community colleges in Maryland shall accept for enrollment in credit-bearing courses all students who meet the Maryland CCR Standard.

Potential definitions of success that will be evaluated in the research study may include:

- First-year postsecondary GPA, at both two- and four-year institutions
- Cumulative postsecondary GPA, at both two- and four-year institutions
- Credit attainment in entry-level courses in math, ELA, and science
- College persistence and completion
- Earning professional licensure
- Employment two quarters after exiting from high school and/or enrollment in postsecondary education

### Study Two: Long-Term Study

To complete the long-term study, MSDE is in the process of developing a Request for Proposals (RFP) for well-regarded external research organizations to apply. MSDE expects that this RFP will be publicly released imminently and be awarded for the study to commence as soon as possible.

MSDE will also ask the research organization to perform a deep content analysis to determine the skills and knowledge necessary to succeed in the first year at a community college or 4-year college or university in Maryland. The definition of the CCR standard may be based primarily on the alignment to community colleges; however, MSDE also has a responsibility to the portion of students who will matriculate directly into a 4-year university and to careers. Maryland schools should strive to prepare its students not just to be “ready,” but to be equipped to thrive in any postsecondary or career environment.

The long-term study will:

- Explore the alignment between Maryland College and Career Ready Standards and the content of entry-level credit-bearing postsecondary courses and postsecondary training.
- Explore the alignment between Maryland College and Career Ready Standards and the content of remedial postsecondary courses.
- Explore the alignment between Maryland College and Career Ready Standards and the tests/measures used by postsecondary institutions to place students in entry-level, credit-bearing postsecondary courses.
- Examine top-performing educational systems throughout the world, comparing these systems to the education offered in Maryland. Specifically, (a) how those systems identify students as “college and career ready,” and (b) the knowledge/skills students in those systems should have if they are identified as “college and career ready.”
- Consider potential sources of bias in assessments used to determine college and career readiness, and strive to eliminate any potential bias in a proposed CCR modification.
- Include a quantitative portion that will verify and expand on the findings of the exploratory study.

## MOVING BEYOND STANDARDIZED ASSESSMENTS

MSDE's guiding CCR implementation principles include establishing that multiple measures for demonstrating college and career readiness be considered. Traditionally, standardized assessments such as SAT, ACT, and state-administered assessments such as the PARCC were used to predict a student's readiness for college and career. To consider other types of measures, and perhaps more equitable measures, the MSDE will explore if other indicators of success, such as local assessments, performance assessments, dual enrollment course completion, GPA, CTE Concentrator course completion, completion of an apprenticeship, or earning an industry-recognized credential could be used as indicators of a student's readiness.

The SAT and ACT have been widely used as primary predictors of college readiness and continue to be used at many postsecondary institutions in determining college admissions, financial aid decisions, and in some cases, placement into remedial or credit-bearing courses. While the intended use of these assessments is their ability to forecast how a student may perform in their first year in college, trend data of over 1.6 million high school graduates during a 12-year period indicated that test scores may be influenced by socioeconomic factors<sup>9</sup>. There specifically appears to be a strong correlation with a student's family income or levels of parental education with higher standardized test scores. Findings show that the more money a student's parents earn and the higher the education level they have completed, the more likely a student will score higher on these assessments.<sup>10</sup> Figures 14 and 15 illustrate an example of the impact of family income on standardized test scores. Together they show the juxtaposition of scores, ethnicity, and family income, and thus should call into question the reliability of what is being measured by the ACT assessment<sup>11</sup> and other similar measures. These practices present a compelling argument in using multiple methods, in lieu of SAT or ACT scores, such as high school GPA or class rank.

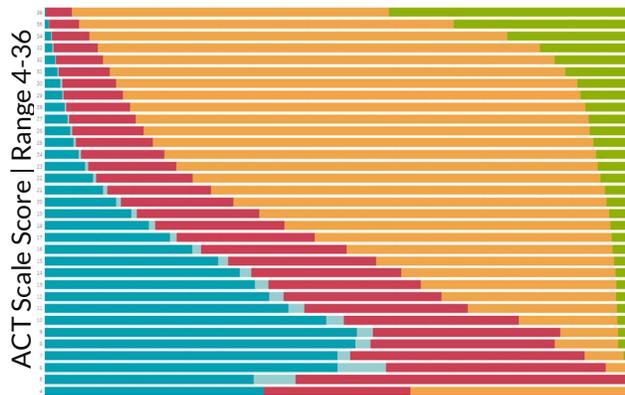
---

<sup>9</sup> Geiser, Saul (2020). Norm-Referenced Tests and Race-Blind Admissions: The Case for Eliminating the SAT and ACT at the University of California. From the book, *The Scandal of Standardized Tests: Why We Need to Drop the SAT & ACT*. Teachers College Press.

<sup>10</sup> ACT content source: <https://www.brookings.edu/blog/the-avenue/2019/05/17/students-need-more-than-an-sat-adversity-score-they-need-a-boost-in-wealth/> Produced by the Hechinger Report.

<sup>11</sup> Graphs Source: Boeckenstedt, Jon. "Some Final Thoughts on the SAT and ACT." <https://jonboeckenstedt.net/2020/01/10/some-final-thoughts-on-the-sat-and-act/> (Accessed October 12, 2021)

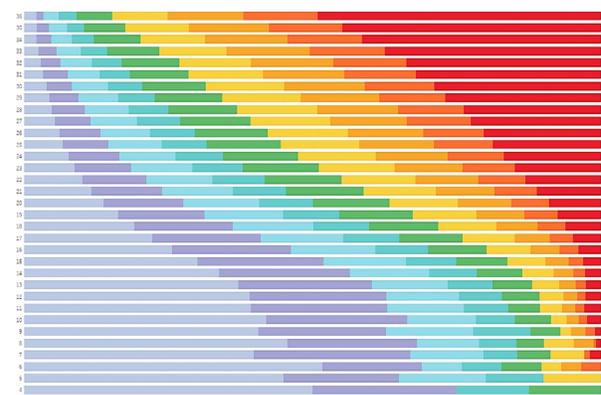
Figure 14: ACT Scores by Race and Ethnicity, 2018



**Ethnicity**

- African American
- American Indian/Alaskan
- Hispanic
- White/Caucasian
- Asian American

Figure 15: ACT Scores by Family Income



**Family Income**

- About \$0 to \$24,000
- About \$24,000 to \$ 36,000
- About \$36,000 to \$50,000
- About \$50,000 to \$60,000
- About \$60,000 to \$80,000
- About \$80,000 to \$100,000
- About \$100,000 to \$120,000
- About \$120,000 to \$150,000
- More than \$150,000

**CASE STUDIES**

*The Blueprint* serves as a clarion call for state and local leaders to consider innovative approaches of the types of measures used to demonstrate that a student is college and career ready. A resounding finding is that the use of a standardized assessment is no longer the only gold standard for a student’s ability to succeed in postsecondary environments.

**Case Study: Arkansas**

In a case study conducted in Arkansas, The Fordham Institute found that CTE concentrators are 21 percentage points more likely to graduate from high school than otherwise identical students (with similar demographics, eighth grade test scores, and number of CTE courses taken) who do not concentrate. In the year after high school, concentrators are 0.9 percentage points more likely to be employed (with average quarterly wages that are \$45 higher), and 1.3 percentage points more likely to be enrolled in a two-year college, than similar non-concentrators.<sup>12</sup>

While college readiness continues to be a strong focus in preparing students for postsecondary life, career readiness at the end of K–12 education is key for the more than 57 percent of high school graduates who either do not enroll in postsecondary education or who work and attend college at the same time (United States Department of Labor, Bureau of Labor Statistics, 2021).<sup>13</sup> CTE Concentrator course completion is a well-researched alternative measure for demonstrating college readiness and especially career readiness.

<sup>12</sup> Dougherty, S. M. (2016). Career and Technical Education in High School: Does It Improve Student Outcomes?. *Thomas B. Fordham Institute*.

<sup>13</sup> Statistics, B. (2021). College Enrollment and work activity of 2020 high school Graduates. *Washington, DC: US Department of Labor*.

### Case Study: Nebraska and South Dakota

Education leaders in Nebraska and South Dakota partnered with the Regional Educational Laboratory Central (REL) to examine postsecondary outcomes of CTE students and found that CTE concentrators were 7 percentage points more likely than non-CTE concentrators to graduate from high school on time and 10 percentage points more likely to enroll in any type of postsecondary education within two years of their expected high school graduation year. The study also found that CTE concentrators were 3 percentage points more likely than non-CTE concentrators to earn a postsecondary award, such as a professional certificate, diploma, or associate's or bachelor's degree, within five years of their expected high school graduation year. CTE concentrators were 4 percentage points more likely than non-CTE concentrators to obtain up to an associate's degree as their highest postsecondary award within five years of their expected high school graduation year but 1 percentage point less likely to obtain a bachelor's degree or higher.<sup>14</sup>

### Case Study: Chicago

As an alternative to relying solely on standardized assessments such as SAT and ACT as a measure of college and career readiness, another method uses a student's high school grade point average (GPA). A recent 2020 comprehensive study compared the use of ACT exam scores to using high school GPA as an effective predictor of a student's college completion. It found that high school grade point averages are five times more effective than ACT scores at predicting who will graduate from college. To offer perspective, this study looked at over 55,000 graduates from all Chicago public high schools across a three-year period.<sup>15</sup>

Individual high schools within Chicago vary greatly in many achievement metrics, yet GPA remains a strong predictor of college enrollment and success. In fact, the study's lead researcher said that "While people often think the value of GPAs is inconsistent across high schools, and that standardized test scores, like the ACT, are neutral indicators of college readiness because they are taken by everyone under the same conditions, our findings indicate otherwise. The bottom line is that high school grades are powerful tools for gauging students' readiness for college, regardless of which high school a student attends, while ACT scores are not." The researchers argue that GPA may be a better indicator of college success because of the wide array of skills and behaviors that contribute to a student's GPA.<sup>16</sup>

A student's persistence and continued success across the varied inputs of different types of assignments, different contents, and different environments are more similar to the actual demands of college, rather than a single test in a sterile environment that can be prepared for over the course of years.<sup>17</sup> Recently, Harvard University had similar findings which led to their amending admission guidelines. Now, candidates can submit "whatever materials they believe would convey their accomplishments in secondary school and their promise for the future."<sup>18</sup>

Overall findings suggest that high school grade point averages perform in a strong and consistent way across high schools as measures of college readiness, whereas ACT scores do not.<sup>19</sup>

---

<sup>14</sup> Brodersen, R. M., Gagnon, D., Liu, J., & Tedeschi, S. (2021). The Impact of Career and Technical Education on Postsecondary Outcomes in Nebraska and South Dakota. REL 2021-087. *Regional Educational Laboratory Central*.

<sup>15</sup> Allensworth EM, Clark K. (2020). High School GPAs and ACT Scores as Predictors of College Completion: Examining Assumptions About Consistency Across High Schools. *Educational Researcher*. 49(3):198-211. doi:[10.3102/0013189X20902110](https://doi.org/10.3102/0013189X20902110).

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

<sup>18</sup> Anderson, N., (2021). Harvard Won't Require SAT or ACT Through 2026 as Test-Optional Push Grows. Washington Post. <https://www.washingtonpost.com/education/2021/12/16/harvard-test-optional-college-admissions/>

<sup>19</sup> Allensworth EM, Clark K. (2020). High School GPAs and ACT Scores as Predictors of College Completion: Examining Assumptions About Consistency Across High Schools. *Educational Researcher*. 49(3):198-211. doi:[10.3102/0013189X20902110](https://doi.org/10.3102/0013189X20902110).

### Case Study: University of California

The University of California is one of many colleges and universities that has removed the ACT and SAT as an admission requirement. Advocacy groups, students, and school systems argued that college entrance tests are “biased against poor and mainly Black and Hispanic students” thus leading to discriminatory enrollment practices based on race, wealth, and disability. The SAT and ACT scores will be used in a limited way such as students who need the English subject matter requirement, course placement purposes, or for advising if students decide to use the scores.<sup>20</sup>

Research into predictors of college success for California high school students found that high school GPA is a stronger predictor of first-year college GPA and second-year persistence than either Smarter Balanced Assessment or SAT at California State University. Also, using high school GPA as a predictor of college success results in a much higher representation of low income and underrepresented minority students in the top of the University of California applicant pool, than do SAT or Smarter Balanced Assessment scores. Using high school GPA with Smarter Balanced Assessments versus high school GPA with SAT also results in a more socioeconomically and racial/ethnically diverse applicant pool.<sup>21</sup>

### Case Study: National Association for College Admission Counseling

The National Association for College Admission Counseling (NACAC) recently released a report citing needed changes from the results of a long-term study which describes potential inequities associated with standardized testing for college-bound students. In the 2020 report, there was a call for solutions focused on identifying barriers for students who needed accommodations; offering fee waivers for the ACT and SAT exams for students who may need financial assistance; and more recently, recognizing the impact COVID-19 is having on college admission practices and policies. To that end, a task force was assembled by the NACAC, whose role it was to study the “cumulative effects on equity and access for international students and US students” taking online standardized tests used for college admissions.<sup>22</sup> The work of the task force is summarized in the report illuminating the Association’s greater goal: ensuring higher education creates environments in which all students, regardless of race, ethnicity, country of origin, or country of residence, are provided equal access to educational opportunity. Consequently, there were certain calls to action including how institutions should use standardized test scores. Historically, they were intended as a “common yardstick” or finding a “diamond in the rough” in their ability to assess the “cognitive characteristics” independent of the impact of a secondary curriculum.

Today, however, the report hastens colleges and universities to consider using high school grades as an important factor in admission decisions. Years of research now point to high school grades as the single strongest predictor of academic success during the first year of college and perhaps beyond. The report adds, though, that standardized test scores can be value-added when combined with high school grades for their predictive prowess.<sup>23</sup>

---

<sup>20</sup> McDonnell, G., (2021). University of California Will No Longer Consider SAT and ACT Scores. New York Times. <https://www.nytimes.com/2021/05/15/us/SAT-scores-uc-university-of-california.html>

<sup>21</sup> Kurlaender, M., & Cohen, K. (2019, March). Predicting college success: How do different high school assessments measure up? [Report]. Policy Analysis for California Education. <https://edpolicyinca.org/publications/predicting-college-success-how-do-different-high-school-assessments-measure-2019>

<sup>22</sup> Latting, J., (2020). Ensuring All Students Have Access to Higher Education: The Role of Standardized Testing in the Time of COVID-19 and Beyond. National Association for College Admission Counseling. [https://www.nacacnet.org/globalassets/documents/knowledge-center/nacac\\_testingtaskforcereport.pdf](https://www.nacacnet.org/globalassets/documents/knowledge-center/nacac_testingtaskforcereport.pdf).

<sup>23</sup> Latting, J., (2020). Ensuring All Students Have Access to Higher Education: The Role of Standardized Testing in the Time of COVID-19 and Beyond. National Association for College Admission Counseling. [https://www.nacacnet.org/globalassets/documents/knowledge-center/nacac\\_testingtaskforcereport.pdf](https://www.nacacnet.org/globalassets/documents/knowledge-center/nacac_testingtaskforcereport.pdf).

### Case Study: Everett Community College, Washington

Everett Community College, one of 34 community and technical colleges in Washington state, offers an innovative approach for prospective students trying to meet college admission requirements. Alternative options appear scenario-based and mirror much of the more recent research for college admission such as:

- A student who completed a math class at a Washington high school, within the last two years, and who earned a C+ or better, both semesters, enroll in a credit-bearing Math course.
- A student who graduated from a Washington high school, within the last five years with a 2.5 GPA or higher, can enroll in English 101.

### REVISIONS TO CCR STANDARD

*The Blueprint* specifies that each student should be supported to reach college and career readiness by the end of the 10<sup>th</sup> grade to be prepared for participation in Post-CCR pathways during 11<sup>th</sup> and 12<sup>th</sup> grades. The studies that the MSDE are commissioning will determine whether GPA is a valid and reliable predictor of postsecondary success in Maryland. The MSDE will also investigate the reliability of multiple measures for determining how students meet the CCR standard. Based on previous research, possible determinations might include cumulative 9<sup>th</sup> and 10<sup>th</sup> grade GPA, core subjects GPA, cumulative GPA including middle school courses, attainment of credits in core content courses, attainment of credits in career and technical education (CTE) courses, or a combination together with assessment scores, attendance, or other behavioral metrics. Although discussed earlier in this report, it is worth revisiting how high school grade point average has been shown to be a stronger predictor of performance in college-level English and math, than standardized test scores, among first time students enrolled in college-level courses.<sup>24</sup>

Based on the outcomes of the commissioned research studies and other research, GPA and course completion should be considered, at a minimum, as additional ways for students to meet an updated CCR standard. Additionally, the MSDE will continue to investigate how various measures of college and career readiness, including using GPA and course completion, may be used to identify when each student met the CCR standard.

Once the commissioned research studies have been completed, the MSDE will define and provide guidance and recommendations for what skills and knowledge students need to succeed in college and a career. As part of the draft process, the MSDE will propose needed changes to the CCR standard with a variety of options for measurement. The MSDE will bring the revised CCR standard to the State Board of Education for approval. Additionally, the outcome of the research studies may require revisions to the comprehensive assessment program, its related content standards, administration methods, or options for students to display mastery through alternative methods.

---

<sup>24</sup>Hodara, M., & Lewis, K. (2017). How well does high school grade point average predict college performance by student urbanicity and timing of college entry? (REL 2017-250). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest. Retrieved from [https://ies.ed.gov/ncee/rel/regions/northwest/pdf/REL\\_2017250.pdf](https://ies.ed.gov/ncee/rel/regions/northwest/pdf/REL_2017250.pdf)

## Section 2: Curriculum Alignment and Changes

---

Following the adoption of a revised CCR Standard, all coursework and instructional programming leading up to 10th grade must be examined for alignment and coherence. An instructional system that is seamlessly aligned between the standard, instructional programs, assessments, and evidence-based supports will enable students to be prepared at each level of their academic journey.

*The Blueprint for Maryland's Future* sets the expectation that students meet the College and Career Readiness standard by the end of their 10<sup>th</sup> grade year. This could represent a major shift and change in how state and local school systems sequence courses and programs to ensure students meet the CCR standard in 10<sup>th</sup> grade, such that courses, normally taught in 11<sup>th</sup> or 12<sup>th</sup> grade may be shifted to earlier grade levels. The research studies mentioned earlier may indicate that the current content standards and curricula in place in Maryland schools are not aligned or sufficient for a student to succeed in their first year of higher education. If this is the case, revision to current instructional practices and programming must be examined to ensure that all students are supported in their progression to meeting the CCR standard.

Using the outcome of the research studies, the MSDE, together with the input of vital stakeholder groups, will draft plans for how curricula at each grade level or course by content area will need to be revised. Some potential course sequences, revisions, and additional opportunities for improvement are discussed below by each content area. These options are all preliminary and may change based on stakeholder feedback and engagement.

### MATHEMATICS

The content with the largest potential for change is mathematics. Under current COMAR for Enrollment and Credit Requirements,<sup>25</sup> to receive a Maryland diploma, a 9th grade student entering the Maryland education system in the 2021-22 school year must earn four mathematics credits, which must include a credit in algebra and a credit in geometry. These students would follow the traditional Algebra 1 (grade 9)—Geometry (grade 10)—Algebra II (grade 11) model; however, this sequence may not provide students with the knowledge, skills, and understandings needed to demonstrate readiness for college and career in the time indicated in *The Blueprint*. Consequently, students who were not able to demonstrate a certain score or performance level on the state assessment might be required by a community college or university to take remedial mathematics courses before enrolling in credit-bearing college courses. An investigation of the mathematics content in various college placement tests reveals that those tests typically include many more questions of algebra-related topics and fewer questions on geometry-related topics, which calls into question whether traditional high school mathematics requirements and course sequences work effectively in today's education landscape.

In fact, a growing number of national organizations are calling for states to rethink the high school mathematics sequence. In the National Council of Teachers of Mathematics (NCTM) publication "Catalyzing Change in High School Mathematics" (2018), an argument is presented on blending geometry content and statistics into the mathematics required for high school graduation.<sup>26</sup> This approach would equip students with the skills needed to understand the vast amount of data they will encounter in the future. Additional research from the National Center on Education and the Economy (2013)<sup>27</sup> and others (Charles A. Dana

---

<sup>25</sup> COMAR 13A.03.02.03. <http://www.dsd.state.md.us/comar/comarhtml/13a/13a.03.02.03.htm>

<sup>26</sup> National Council of Teachers of Mathematics. (2018). *Catalyzing Change in High School Mathematics: Initiating Critical Conversations*.

<sup>27</sup> National Center on Education and the Economy (NCEE). (2013). *What Does It Really Mean to be College and Work Ready? The Mathematics and English Literacy Required of First Year Community College Students*.

Center, 2020)<sup>28</sup> finds that a student is better prepared to succeed in college math courses when a strong understanding of the concepts in Algebra I are combined with some statistics and some geometry topics. Any higher-level courses, including a full year of geometry and Algebra II, are not necessary for postsecondary success. Based on these research findings, Maryland students might be better served and better prepared for college if the geometry graduation requirements were changed to a geometry/statistics blend requirement. As an example, see Mathematics Progression Option 1 (Table 1), among other suggested course sequence change options as modeled in Tables 2 and 3. These shifts in course sequence for mathematics could require the development of a new course framework in the context of larger systemic changes to the math progressions and potentially other policy changes.

### **Key considerations that may impact the decision-making process related to the CCR Mathematics Pathways include:**

- The University System of Maryland admission policy requires 4-credits of mathematics taken while in high school, including Algebra I, Geometry, and Algebra II. Students who complete Algebra II prior to their final year must complete the four-year mathematics requirement by taking a course or courses that are more advanced than Algebra II. The current University of Maryland admission policy (2017) will be reevaluated in spring 2022, and any changes to this policy could impact the mathematics pathways for high school students. The results of the MSDE engagement and research may also provide an opportunity to collaborate between MSDE and USM to collectively determine the ideal requirements for students.
- Maryland colleges offer several options for the first credit-bearing, college-level mathematics course. Options include College Algebra, Statistics, and Quantitative Literacy. The placement test cut score required for students to be eligible to take College Algebra is higher than the cut scores needed for taking Statistics or Quantitative Literacy. If Maryland's CCR standard indicates that students can take any credit-bearing college-level mathematics course at a local community college, the cut score set will need to reflect this.
- Geometry can be taken anywhere in the high school mathematics sequence after Grade 8. Students have the option of taking Geometry concurrently with other high school mathematics courses.

### **MATHEMATICS PROGRESSION OPTIONS**

Below are possible mathematics course progressions that are examples of course sequences leading toward a CCR designation by the end of 10<sup>th</sup> grade, or by graduation. Each sequence proposes a model beginning in 7<sup>th</sup> grade.

---

<sup>28</sup> Launch years: A new vision for the transition from high school to postsecondary mathematics (2020). Charles A. Dana Center.

### Mathematics Progression Option 1:

For school year 2021-2022, entering 9<sup>th</sup> grade students are required to earn four credits of math, which includes earning credit in Algebra I and Geometry; however, the traditional course sequence may not adequately prepare students for the new standard of being college and career ready by the end of 10<sup>th</sup> grade. Therefore, one possible revised course sequence under Mathematics Progression Option 1 (Table 1), would be to incorporate a newly developed course which blends statistics and geometry, as a course offering by the time a student reaches grade 10. This model follows other innovative models across the nation in which a re-evaluation of the role geometry plays in a typical high school mathematics course sequence <sup>29</sup> appears to be changing. Offering a more complex sequence of courses could pose challenges for some students. Under *The Blueprint*, a requirement is to provide enrollment options via an extended curriculum with an emphasis on project-based and problem-based applied learning and varied instructional timing. Students who are “Not on Target to Meet the CCR Standard” take the same mathematics courses as students who “Are on Target to Meet CCR” through grade 10; but LEAs are required to provide an extended curriculum as described above to support such students.

**Table 1: Mathematics Course Sequence Option 1** - Requires revisions to COMAR, changing the current Geometry course to a blended delivery of a Geometry/Statistics course.

Sequences	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Not on Target to Meet the CCR Standard</b>	Math 7	Math 8	Algebra I	Geometry/ Statistics	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Topics for Mathematical Literacy</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Topics for Mathematical Literacy</li> </ul>
<b>On Target to Meet the CCR Standard</b>	Math 7	Math 8	Algebra I	Geometry/ Statistics	Possible Course Selections: <ul style="list-style-type: none"> <li>• Algebra II</li> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Precalculus</li> <li>• Data Science</li> <li>• Statistics</li> </ul>
<b>Accelerated</b>	½ Math 7 and Grade 8	Algebra I	Geometry/ Statistics	One of: <ul style="list-style-type: none"> <li>• Algebra II</li> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Precalculus</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Computer Science</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Calculus</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Computer Science</li> </ul>

<sup>29</sup> Should High Schools Rethinks How They Sequence Math Courses? Education Week. November 2019. <https://www.edweek.org/teaching-learning/should-high-schools-rethink-how-they-sequence-math-courses/2019/11>

### Mathematics Progression Option 2:

As an alternative course sequence, Table 2 illustrates how a course sequence could change to reflect a possible outcome of the rigorous studies being conducted by external parties under *Blueprint*. If it is determined that the current Algebra I coursework does not adequately prepare students to be college and career ready by the end of the 10<sup>th</sup> grade, this course sequence would necessitate a change in COMAR to require students to earn a credit in Algebra II, by the end of 10<sup>th</sup> grade.

**Table 2: Mathematics Course Sequence Option 2-** If it is determined that a student needs Algebra II for CCR, these sequences show a model that would prepare students to be CCR by the end of 10<sup>th</sup> grade.

Sequences	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Not on Target to Meet the CCR Standard</b>	Math 7	Math 8	Algebra I	Algebra II	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Data Science</li> <li>• Geometry/Statistics Blend</li> <li>• Topics for Mathematical Literacy</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Topics for Mathematical Literacy</li> </ul>
<b>On Target to Meet the CCR Standard</b>	Math 7	Math 8	Algebra I	Algebra II  <i>(option to take Geometry concurrently with Algebra II)</i>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Geometry</li> <li>• Precalculus</li> <li>• Data Science</li> <li>• Statistics</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Calculus</li> <li>• Data Science</li> <li>• Statistics</li> </ul>
<b>Accelerated</b>	½ Math 7 and Grade 8	Algebra I	Geometry	Algebra II	Possible Course Selections: <ul style="list-style-type: none"> <li>• Precalculus</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Computer Science</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Calculus</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Computer Science</li> </ul>

### Mathematics Progression Option 3: Same Math Sequence for All Students through 10th grade

A few states and school systems have recently opted to rework the math course progression with a focus on equity; all students enter the same main pathway of math courses at the same point as shown in Table 3. Proponents of this approach explain that it promotes equity across student groups because it offers the same coursework with needed supports and opportunities to accelerate student learning. As an example, the Brookings Institute recently reported that the 2021 California Mathematics Framework has been structured so that all students take “common, heterogeneously grouped math classes through 10<sup>th</sup> grade” so that no student be allowed to accelerate until the 11<sup>th</sup> grade. This is based on the belief that a lack of “tracking or acceleration” would enable all students to regard math courses as a subject for which they can be successful and to which they belong.<sup>30</sup>

**Table 3: Mathematics Course Sequence Option 3:** This option would require the mathematics courses required for graduation to include Algebra II. This option does not allow students to take Algebra I in middle school. Students could still get to Calculus in high school by taking two mathematics courses in one year. This option does not include an accelerated sequence.

Sequences	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
<b>Not on Target to Meet the CCR Standard</b>	Math 7	Math 8	Algebra I	Algebra II	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Topics for Mathematical Literacy</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• College Algebra</li> <li>• Data Science</li> <li>• Statistics</li> <li>• Topics for Mathematical Literacy</li> </ul>
<b>On Target to Meet the CCR Standard</b>	Math 7	Math 8	Algebra I	Algebra II  <i>(option to take Geometry concurrently with Algebra II)</i>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Geometry</li> <li>• Precalculus</li> <li>• Data Science</li> <li>• Statistics</li> </ul>	Possible Course Selections: <ul style="list-style-type: none"> <li>• Calculus</li> <li>• Data Science</li> <li>• Statistics</li> </ul>

<sup>30</sup> Loveless, T. (2019). Does Tracking Promote Educational Equity? Brookings Institute. October 4, 2021.

<https://www.brookings.edu/blog/brown-center-chalkboard/2021/10/04/does-detracking-promote-educational-equity/>

## CASE STUDIES

The MSDE examined case studies from other states and districts to inform the development of the possible math pathways. These include Virginia, Oregon, Utah, and San Francisco.

### Case Study: Virginia

Virginia recently proposed an integrated math pathway that promotes equity, while allowing for individual acceleration for each student. This approach accelerates the learning of all students by holding the curriculum standards constant for all students and ensuring that even the lowest performing students meet those standards. Accelerated students continue to benefit from advanced offerings while deepening understanding of essential concepts. An overview of Virginia's proposed math progressions is provided in Figure 16.

Figure 16

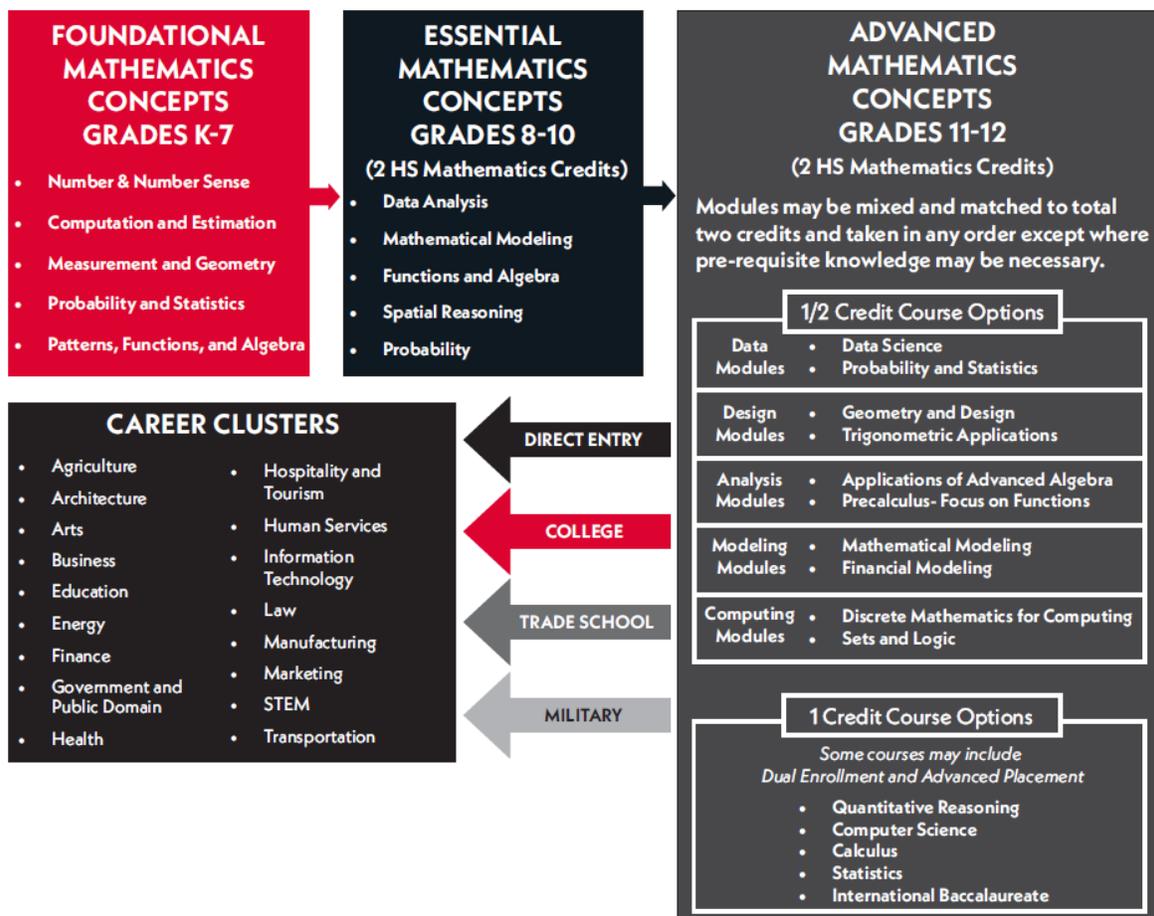


Figure 16. Shows the Virginia state education model, based on the state's conceptual rendering for offering a math sequence that is equitable to all students. Of note, this model begins with the foundational math standards as early as kindergarten and requires 4 credits of mathematics to graduate high school, much like Maryland's model.

### Case Study: Oregon

As recently as 2021, Oregon has been working on overhauling their mathematics standards and high school math course progressions. The overhaul <sup>31</sup> comes after a shifting of mindset from adults placing students in classes to schools engaging students in course selection and offerings that fit a student's career and college goals. <sup>32</sup> Figure 17 shows a visual representation of the sequence to three distinct pathways, leading Oregon students to college and career. Of note, Oregon's state model shows just three credits in mathematics and does not include a STEM or CTE-based pathway, unlike proposed Maryland models.

Figure 17

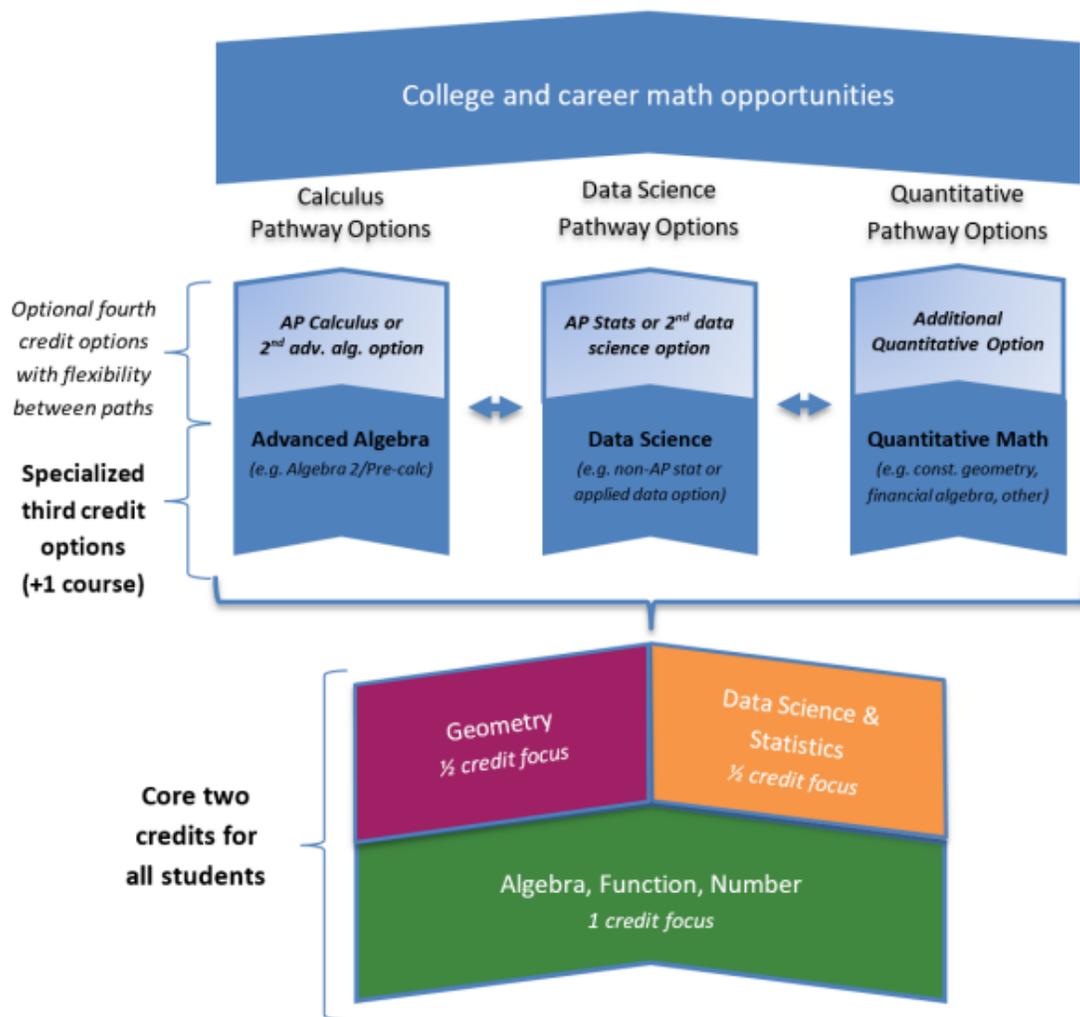


Figure 17. Adapted from Oregon Math Standards Review & Revision (Version 3.3.0): January 2021 PUBLIC REVIEW DRAFT – High School Draft Mathematics Standards (Oregon Department of Education, January 29, 2021). Shows an example of what Mathematics Progression Option 3 could look like if Maryland changes from Geometry to a Geometry/Statistics blend. (n.b.- Oregon Department of Education only requires three credits of mathematics and does not have a CCR option.)

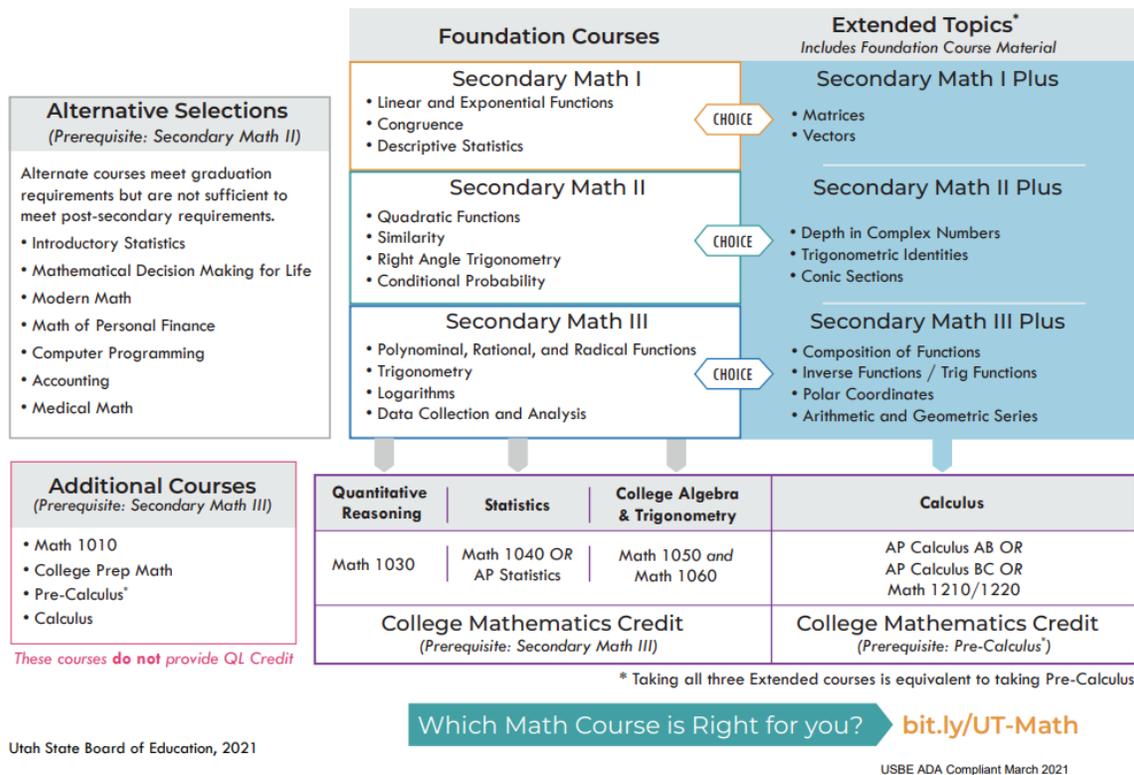
<sup>31</sup> Oregon Math Standards Review and Revision, January 2021. [https://www.oregon.gov/ode/educator-resources/standards/mathematics/Documents/Draft%20Math%20Standards/21\\_High%20School\\_Draft%20v3.3\\_Introduction.pdf](https://www.oregon.gov/ode/educator-resources/standards/mathematics/Documents/Draft%20Math%20Standards/21_High%20School_Draft%20v3.3_Introduction.pdf)

<sup>32</sup> Gewertz, C., (2019). Should High Schools Rethink How They Sequence Math Courses? Edweek, November 13, 2021. <https://www.edweek.org/teaching-learning/should-high-schools-rethink-how-they-sequence-math-courses/2019/11>

### Case Study: Utah

The Utah High School Mathematics Graduation Pathways shows the different progressions available to high school students as they register for classes. It provides students several pathways for meeting a Quantitative Literacy (QL) requirement in college while potentially satisfying the requirement in high school.<sup>33</sup> This model also allows for some students to take extended topics concurrently with the foundation courses, for those students who excel in a more accelerated environment.

Figure 18



34

### Case Study: San Francisco

With the adoption of the Common Core State Standards in 2013, the San Francisco Unified School District and County Office of Education policy, based on the Mathematics Placement Act of 2015 (SB 359, Ca.) requires a “fair, objective, and transparent mathematics policy for pupils entering grade 9”<sup>35</sup> that considers:

- Systematic and multiple objective academic measures of student performance
- Measures include statewide assessments, placement tests, classroom assignments, grades, and report cards.
- At least one checkpoint within the first month of school to ensure accurate placement.

<sup>33</sup> Utah State Board of Education (2021). Utah High School Mathematics Graduation Pathways. <https://www.schools.utah.gov/file/08a2d9be-d56d-4109-a1b7-0c88092eda38>

<sup>34</sup> Utah System of Higher Education (2015). Math and Graduation: High School Math & First Year of College Critical to Completion. <https://ushe.edu/high-school-math-critical-to-completion/>

<sup>35</sup> San Francisco Unified School District and County Office of Education Board Policy 6152.1 Math Placement Policy. <https://go.boarddocs.com/ca/sfusd/Board.nsf/goto?open&id=B94834042051>

The school system was charged to develop a new math sequence with broader access to grade-level mathematics courses so that all students in the district take Common Core-aligned mathematics courses in grades 6-10 and have multiple pathways for taking advanced math courses such as AP Statistics and AP Calculus, as shown in Figure 19. According to the school district's website, more students began accessing courses beyond Algebra 2, as demonstrated by increased enrollment, which, in turn, increased enrollment in AP course offerings. Additionally, the district saw the percentage of African American and Latino students increasing in coursework beyond Algebra 2 from 11% and 14% in 2016-2017 to 14% and 16% by 2019-2020 school year<sup>36</sup>, respectively.

Figure 19

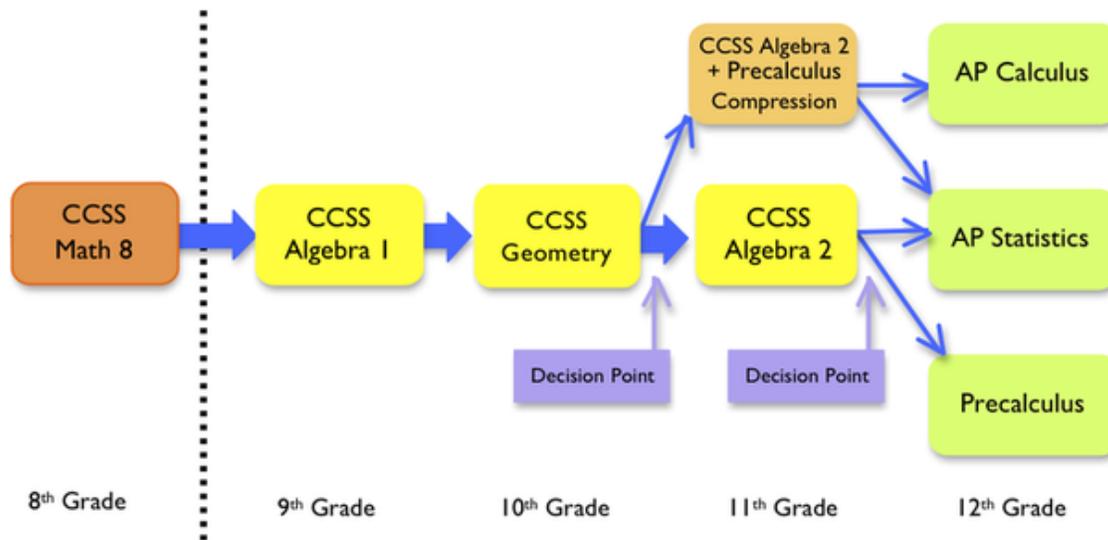


Figure 19. Shows the San Francisco Unified School District's course sequence for mathematics, beginning in grade 8. The CCSS Math 8 is designed to prepare students for success in high school math courses. This model is worth comparing to other models and to proposed Maryland models in terms of its eligibility and application process.<sup>37</sup>

## ENGLISH LANGUAGE ARTS

Current Maryland regulation<sup>38</sup> stipulates that each local school system shall provide an instructional program in English language arts/literacy each year for all PreK-8 students and an English language arts/literacy program for grades 9-12 which enables students to meet graduation requirements. Importantly, the regulation sets the expectation that all curricula, text, and curriculum documents be aligned with the Maryland College and Career Ready Standards for English language arts/literacy.

Another key regulation in Maryland is the recently adopted Ready to Read Act.<sup>39</sup> The Code of Maryland Regulations (COMAR) requires that local school systems ensure that all students enrolled in public kindergarten are screened to identify if the student is at risk for reading difficulties and provide supplemental reading instruction aligned to the results of the screener. Students in first, second and third grade shall also be included in the screening and supplemental reading instruction if they were not previously screened, demonstrated difficulty mastering grade level reading in the previous grade, or transferred to a public elementary school. If the screening results indicate that a student is at risk for

<sup>36</sup> Matthews, V., (2021). How Changing Math Programming Increases Access to College and Career Ready Courses. EdSource, December 9, 2021. <https://edsources.org/2021/how-changing-math-programming-increases-access-to-college-and-career-ready-courses/664505>

<sup>37</sup> San Francisco Unified School District (n.d.) 9<sup>th</sup> Grade Math Placement & Math Validation Test Information. <https://www.sfusd.edu/mvt>

<sup>38</sup> COMAR 13A.04.14.01. <http://www.dsd.state.md.us/comar/comarhtml/13a/13a.04.14.01.htm>

<sup>39</sup> COMAR 13A.03.08. [http://www.dsd.state.md.us/COMAR/SubtitleSearch.aspx?search=13A.03.08.\\*](http://www.dsd.state.md.us/COMAR/SubtitleSearch.aspx?search=13A.03.08.*)

reading difficulties, the local school system shall notify the parent or guardian in writing of the student's screening results and a description of the supplemental reading instruction that shall be provided. It is expected that the supplemental instruction takes place within the school day, is data-informed, and is aligned with the student's specific areas of deficit. The local school system shall also set an individualized review schedule of the supplemental instruction for each student at intervals of not more than 30 days for progress monitoring. Information about the law, the screening process, progress monitoring, and reporting requirements can be found on the Maryland Public Schools website.<sup>40</sup>

While COMAR and *The Blueprint* do not address the capacity of existing teachers to deliver instruction in structured literacy, which is applying the science of reading in the classroom, the MSDE is aware of the need to provide continuous professional learning and support. The implementation of structured literacy across the state and subsequent evidence of its impact on student achievement would require a multi-year approach that includes training teachers, administrators, and staff members, and then providing on-going job-embedded coaching and support to improve literacy rates through grade 12.

Meeting *Blueprint* expectations and preparing for potential changes in COMAR beginning with Maryland's youngest children to grade 12 are inarguably heavy lifts. Therefore, changes to existing Maryland policy and regulation may be needed based on the outcome of external research studies. Such changes may require the adoption of a new CCR standard, thus initiating the development of new PreK-12 content standards, coursework, and course sequencing options. The MSDE is prepared to revise, replace, or realign standards within each of the English language arts/literacy strands (Reading Foundational, Reading Literature, Reading Informational Text, Language, Writing, and Speaking and Listening standards) as needed. The MSDE has also investigated leading research on literacy along with case studies to inform policy and provide guidance to local school systems.

### The Science of Reading

Increasingly, state agencies and school systems are prioritizing the use of evidence-based early literacy programs and instruction using findings from large, established studies grounded in psychology, human development, and cognitive science on how people read. A key finding is that high-quality instructional programs and curricula must be an integration of reading foundational skills (phonological and phonemic awareness) and meaning-making and comprehension-focused skills. Educator surveys suggest there is an understanding of this integrated approach to literacy for young readers, yet state and national reading data show persistently low achievement in reading.<sup>41</sup> Many districts across the nation are spending time and money on early literacy through the science of reading to close the opportunity gaps that were exasperated by the Covid pandemic.

Maryland's Ready to Read Act is a good place to start for young readers, but more needs to be done. First, non-negotiables for early reading instruction must be established with clear guidance for every PreK-3 teacher. These non-negotiables should include at a minimum:

- Explicit and precise instruction on every strand of literacy- alphabetics, phonemic awareness, phonics, vocabulary, fluency, language usage, and comprehension
- Instruction with clear modeling, independent practice and immediate feedback by educators
- Data-informed decision-making structures in place so that educators know how to adjust instruction such that a sufficient phonics instruction would elicit evidence that at least 80 percent of all students, including special education students, can read simple text independently at the end of first grade and more complex texts with understanding by the end of third grade

<sup>40</sup> Students with Reading Difficulties. MSDE. <https://marylandpublicschools.org/programs/Pages/ELA/ReadingDifficulties.aspx>

<sup>41</sup> Gabriel, R., (2021). *The Sciences of Reading Instruction*. Educational Leadership. Vol. 78 no.8.

- School-based structures that incorporate a cycle of continuous improvement where a plan-do-study-act or a Multi-Tiered System of Support (MTSS) model enables educators to implement a short-term intervention of about 3-4 months for students who demonstrated a need for additional support.<sup>42</sup>
- Teachers trained in structured literacy, age-appropriate pedagogy, and culturally responsive teaching
- A knowledge building curriculum aligned to the Maryland College and Career Readiness Standards

### Science of Reading Case Studies

The science of reading has grounded many state literacy plans, as mentioned above. A few state examples of early literacy models are included below.

#### Delaware

Delaware's Prekindergarten-Grade 3 Literacy Plan resulted in serious concerns over student group decreases in reading proficiency rates. The plan outlines four strategic intents aligned with key activities by teachers, leaders, and stakeholder partners: Align core instruction to the standards; implement curriculum using high-quality instructional materials; enhance early literacy instruction; and support educators through institutes of higher education.<sup>43</sup>

#### Mississippi

The Literacy Based Promotion Act was originally intended to identify K-3 students who need additional help in reading as early as possible and to provide effective instruction and intervention to ensure they read on grade level by the end of third grade. In 2016, the law was amended to include individual reading plans for students identified with a reading deficiency, and a higher cut score was established for third-grade promotion. Additionally, SB2572 was enacted, requiring teacher candidates to pass a foundational reading test for certification to ensure they have the knowledge and skill to teach all students to read. The law includes:<sup>44</sup>

- Statewide training to support teachers with scientifically-based reading instruction and intervention.
- Reading coaches to provide job-embedded training and support for teachers.
- Early identification of K-3 students who have a reading deficiency.
- Parent notification and regular communication with parents of students identified with a reading deficiency.
- Individual reading plans, created in collaboration with the parent, prescribing the immediate specialized instruction and supports that will be provided to the student identified with a reading deficiency.
- Retention for third graders who do not meet the cut score for promotion.
- Good cause exemptions from retention to recognize the needs of some students.
- Specific intervention services for retained third-grade students, including resources to support parents with literacy activities at home.

---

<sup>42</sup> IRIS Center at Peabody College of Education, Vanderbilt University. (2021). Components of RTI and Components that Comprise High-Quality Reading Instruction. <https://iris.peabody.vanderbilt.edu/module/rti03/cresource/q1/p01/#content>

<sup>43</sup> Literacy Plan for Prekindergarten-Grade 3. Delaware Department of Education. [https://www.doe.k12.de.us/cms/lib/DE01922744/Centricity/Domain/167/literacy-5c-20s\\_6\\_24\\_19\\_final.pdf](https://www.doe.k12.de.us/cms/lib/DE01922744/Centricity/Domain/167/literacy-5c-20s_6_24_19_final.pdf)

<sup>44</sup> Mississippi's Literacy-Based Promotion Act: An Inside Look. ExcelinEd. <https://www.excelined.org/wp-content/uploads/2019/03/ExcelinEd.MSGatewaytoSuccess.March2019.pdf>

As a result of these policies, Mississippi students have risen faster than anyone since 2013, particularly for fourth graders. In fourth grade reading results on the National Assessment of Educational Progress (NAEP), Mississippi boosted its ranking from forty-ninth in 2013 to twenty-ninth in 2019; in math, they zoomed from fiftieth to twenty-third. Adjusted for demographics, Mississippi now ranks near the top in fourth grade reading and math according to the Urban Institute.<sup>45</sup>

### North Carolina

The Excellent Public Schools Act of 2021 modifies the implementation of read-to-achieve programs, including changes to reading instruction in North Carolina public elementary school classrooms, with the aim of improving literacy levels by the time students reach the third grade. Notably, the law transitions reading instruction away from a 'look and say' method to adopt a 'Science of Reading' approach based on phonetic practices of comprehension and establishes an Early Literacy Program in the N.C. Department of Public Instruction to provide teacher training and support. The law requires all early education teachers, future educators, and professors in teacher preparation programs to be trained in reading instruction grounded in the science of reading. The training will take between 138 and 168 hours over the span of two years.<sup>46</sup> Additionally, Educator Preparation Programs seeking approval or renewal from the state after July 2022 will need to provide coursework in the science of reading for all teacher candidates.<sup>47</sup>

### Colorado

The Colorado Reading to Ensure Academic Development Act (READ Act), passed by the Colorado legislature in 2012, focuses on early literacy development for all students and especially for students at risk to not read at grade level by the end of the third grade. The READ Act focuses on literacy development for kindergarteners through third-graders. Students are tested for reading skills, and those who are not reading at grade level are given individual READ plans. In 2019, the legislature made several changes to the READ Act to help educators support reading success among the state's youngest learners. Not all of Colorado's educators have had the opportunity to learn the science of teaching reading in their teacher training programs, so one of the changes to the READ Act will require training on the latest evidence-based reading instruction strategies for all K-3 teachers. This is a one-time requirement for teachers. Districts that do not meet the requirements will be ineligible for READ Act funds for the 2022-23 school year. Each year going forward, districts will need to make sure teachers new to K-3 have met this requirement. The training must:<sup>48</sup>

- Consist of a minimum of 45 hours
- Address the content of the educator preparation literacy standards
- Include an end-of-course assessment that teachers can provide evidence of passing

### Content-Rich Instruction

Developing students' reading comprehension is a complex task that requires multiple levels of instruction and practice. Skills such as developing vocabulary and word knowledge, understanding sentence structure and grammar, and using strategies such as determining main ideas and summarizing are important and are part of the Maryland College and Career Ready ELA standards to which districts have aligned their curricula. Increasingly, it is becoming evident that the knowledge a reader brings to the text (background

<sup>45</sup> Mississippi rising? A partial explanation for its NAEP improvement is that it holds students back. Todd Collins. Fordham Institute. <https://fordhaminstitute.org/national/commentary/mississippi-rising-partial-explanation-its-naep-improvement-it-holds-students>

<sup>46</sup> Retraining an entire state's elementary teachers in the science of reading. Ariel Gilreath. The Hechinger Report. <https://hechingerreport.org/retraining-an-entire-states-elementary-teachers-in-the-science-of-reading/>

<sup>47</sup> DPI maps out science of reading plan and returns to Amplify's mCLASS tool to assess readers. Rupen Fofaria. EdNC. <https://www.ednc.org/2021-06-03-dpi-science-reading-rollout-plan-amplify-mclass-tool-assess-young-readers/>

<sup>48</sup> Colorado READ Act. Colorado Department of Education. <https://www.cde.state.co.us/coloradoliteracy>

knowledge or schema) is also critically important. Research continues to show that there is a reciprocal relationship between a student's base of knowledge and successful reading comprehension. Having knowledge related to the topic of a text improves a student's comprehension, and comprehension of the text in turn allows the reader to build new knowledge. Creating a coherent understanding of what one reads modifies the background knowledge that is available for subsequent reading comprehension either later in the same text or in future reading of related texts (Catts, 2021).

To support students' growing comprehension abilities, the most effective reading materials are arranged by topic of study in a logical and sequential manner to form an integrated, content-rich curriculum that develops students' core knowledge about the world. Additionally, in the earlier grades, there must be a strong emphasis on teaching foundational skills. Depending on the grade, instruction in decoding, spelling and fluency should comprise its own unit. The strongest approaches also integrate key comprehension strategies that are often employed in traditional ELA instruction, such as inferencing and paraphrasing; however, some strategies are best selected and taught based on their relevance to the text and purpose (Catts, 2021).

A recent meta-analysis showed that when compared with traditional programs in which literacy and content instruction were provided separately, integrated, content-rich programs resulted in students scoring significantly better on vocabulary and comprehension, including on standardized measures of comprehension (H. Hwang, S. Cabell, and R. Joyner, 2014). Based on this research, curriculum and instructional changes in Maryland districts may need to shift to a more integrated approach for ELA and other content areas.

Considering the research and examples of innovative approaches adopted by other states, Table 4 below provides a structure of requirements and supports for students achieving above grade level, as well as students needing additional supports. *The Blueprint* requires that all students who are not on track for CCR be given additional opportunities to accelerate their learning. The suggestions below provide possible course progressions leading toward CCR beginning in PreK and continuing through the end of grade 12 if needed. School districts can implement a variety of plans and unique structures to support students.

Table 4 below shows a course sequence that provides options for how the English language arts and English courses could be structured. All core curricula should incorporate high-impact pedagogy and practices described above. All students must receive content rich curriculum, or Tier I instruction, and as demonstrated through multiple measures, such as the universal screener, Tier II or III instruction, grounded in the science of reading, as described above. The expectation of this model is that formative and summative assessment practices are used frequently to identify which students need an extended curriculum (using targeted supplemental instruction) or are ready for a college and career course sequence.

**Table 4: Potential ELA Course Sequence**

Course Sequence	PreK-3 <sup>rd</sup> Grade	Grade 4 and 5	Grade 6-8	Grade 9-10	Grade 11 and 12
<b>Not on Target to Meet the CCR Standard</b>	Standards-based Core curriculum, grounded in the Reading Foundational Skills Standards  AND  Targeted, evidence-based <b>supplemental instruction</b> for students demonstrating need on the reading screener/ diagnostic	Standards-based Core curriculum  AND  Targeted, evidence based <b>supplemental instruction.</b>	ELA course (6-8)  AND  Students would be enrolled in an intervention course	English 9 and 10  AND  Individualized supports, potentially including an intervention course.	English 11 and 12  AND  Transitional Courses that include instruction aligned to an individualized plan.
<b>On Target to Meet the CCR Standard</b>	Standards-based Core curriculum (ELA) from PreK through grade 3	Standards-based Core curriculum (ELA) 4 <sup>th</sup> -5 <sup>th</sup> grade  AND extension activities or GT programs for students who have mastered grade level standards	ELA course (6-8)  AND GT programs when appropriate	English 9 and 10  Honors and GT courses are available when appropriate	English 11 and 12  Honors, GT, AP, or IB courses are available when appropriate Dual Enrollment (English 101 or 102) is also available

## SCIENCE

Traditionally, many high schools placed Biology at the start of the high school progression. This practice dates back over a century to a time when understanding of living systems stood in stark contrast to contemporary understanding. In recent years, some schools “flipped” the traditional order of courses to introduce students to physics as a first course. The rationale highlights the imperative of an understanding of core physical principles as fundamental to developing an understanding of complex chemical and biological systems. Regardless of the sequence of courses, Maryland’s Next Generation Science Standards (NGSS) make it clear that all students should have access to rigorous and inspiring learning experiences in each of the major disciplines of science including the Earth and space sciences, the biological sciences, and the physical sciences.

An optimal high school course progression in science is not clearly articulated in either the literature or in practice. What is clear, however, is that all students must engage regularly and actively in scientific learning experiences that emphasize the Science and Engineering Practices alongside critical scientific principles that equip students with knowledge and skills to identify and use scientifically sound evidence to make decisions for themselves, their families, and their communities.

Possibly more important than a student’s acquisition of knowledge in science is the student’s engagement in the practice of science. Maryland’s NGSS emphasize these Science and Engineering Practices (SEP) as critical in the development of scientific literacy. Thus, regardless of the content anchoring student learning in science, students must regularly engage in asking investigable questions; designing and conducting scientific investigations; identifying, evaluating, and critiquing scientific evidence; and communicating about scientific information.

High school science courses should build on the scientific foundation established beginning in kindergarten and must align to support students’ ability to demonstrate scientific literacy by 10<sup>th</sup> grade. Maryland’s NGSS describe a developmentally appropriate and vertically articulated progression from kindergarten through the end of high school leading students to achievement of scientific literacy and college and career readiness. Rich student experiences in elementary and middle school science are critical to student success in achieving CCR in high school science.

*The Blueprint* leaves the door open for studying how science should be included in the CCR standard but sets no specifics. Ideally, a CCR standard in science will not depend upon demonstration that a student has acquired a rigid set of knowledge. Instead, it will measure a student’s ability to build scientific understanding and to make sense of scientific phenomena using important scientific principles of multiple content areas with a heavy emphasis on the Science and Engineering Practices. If the science component of the CCR standard is based in these analytical skills, the science course sequence from elementary school through middle school and high school can then be refined to support student success.

## SOCIAL STUDIES

Social studies education prepares students with the knowledge and skills necessary to be empowered, informed, and socially responsible participants in our nation’s democracy while also preparing students to be college and career ready. A robust social studies program supports the broader *Blueprint* goal of preparing students to be College and Career Ready in English by the end of 10<sup>th</sup> grade by providing critical background knowledge required for achievement in English language arts.

Research on inquiry-based social studies programs in elementary grades demonstrates a strong positive relationship between student performance on ELA assessments and the amount of time dedicated to social studies education in early grades. This body of knowledge reinforces the role of background knowledge on reading development. A 2019 University of Michigan Literacy study indicates that cutting time in social studies to privilege time in ELA literacy has a negative impact on reading achievement in early grades,

especially among children in poverty who receive less education in science and social studies. This research indicates that content area literacy instruction in science and social studies not only promotes learning in those contents, but also improves reading comprehension and achievement in other areas.<sup>49</sup>

The 2020 Thomas Fordham Institute's longitudinal study on the impact of elementary social studies supports the University of Michigan's study and found that more instructional time devoted to social studies is correlated with greater reading growth from first through fifth grade by 15%. Additional time in other content areas, including ELA, did not result in the same reading growth. These findings are consistent across subgroups including students from lower-income households and non-English speaking homes.<sup>50</sup>

Uniting all this research is the importance of background knowledge in achieving growth on ELA assessments. A 2005 study by Robert Marzano identified that 41.5% of the content on ELA assessments in grades k-2 was social studies based. That number increased to 58% of the content in grades 3-5.<sup>51</sup> Studies such as Marzano's are important for educational leaders to consider as they highlight the importance of background knowledge in reading development. "The impact of not building enough background knowledge," argues Marzano, "hits disadvantaged children especially hard since they have fewer opportunities to do so on their own through trips to museums and art galleries as well as travel to distant parts of the United States and around the world." The importance of background knowledge is furthered by the Reading for Understanding Initiative (RFUI) which engaged in a five year analysis of the literature and practice of reading instruction. "Knowledge," the RFUI report argues "is cause, consequence, and covariate of reading comprehension," and that "reading comprehension interventions were often (if not always) coordinated with content-area learning goals, usually with comprehension activity enacted in the service of content acquisition." The RFUI expanded our understanding of the types of knowledge necessary for particular acts of reading" to include "disciplinary knowledge about topics—such as how explanation and argumentation operate, what count as claims and evidence, how oral and written discourse conventions shape those processes, and how we come to know what we know—are central to students' acquisition of knowledge and inquiry practices within disciplines. "All of these factors are central to a social studies education that is offered consistently to all students beginning in early elementary school and continuing through the end of high school."<sup>52</sup> It is important that all students in Maryland have access to daily social studies instruction in order to build their background knowledge, to develop their community identity, and strengthen their reading skills.

Despite the research findings demonstrating a positive impact on reading development, elementary schools in Maryland have continued to limit time dedicated to social studies instruction. Since 2015, the MSDE has conducted a legislatively mandated survey of science and social studies teachers and supervisors. A finding from the results of this survey is that participants report that the time dedicated to social studies instruction, the frequency and type of provided professional development, and the type of instructional materials available to elementary teachers in Maryland are inconsistent and fall significantly below that afforded for their secondary counterparts.<sup>53</sup> These results reflect a misguided national trend to marginalize

---

<sup>49</sup> Duke, Nell. "Acquiring Science and Social Studies Knowledge in Kindergarten Through Fourth Grade: Conceptualization, Design, Implementation, and Efficacy Testing of Content- Area Literacy Instruction" Nell Duke Acquiring Sci & SS Knowledge in K-4

<sup>50</sup> Tyner, Adam, et. al. "How Social Studies Improves Elementary Literacy," *Social Education* 85(1), pp.32-39 ©2021 National Council for the Social Studies. <https://fordhaminstitute.org/national/resources/social-studies-instruction-and-reading-comprehension>

<sup>51</sup> Marzano, Robert. *Building Background Knowledge for Academic Achievement*. ASCD, 2005.

<sup>52</sup> P. Pearson et al., eds. (2020). *Reaping the Rewards of the Reading for Understanding Initiative*. Washington DC: National Academy of Education. <https://naeducation.org/wp-content/uploads/2020/07/NAEd-Reaping-the-Rewards-of-the-Reading-for-Understanding-Initiative.pdf>

<sup>53</sup> 2021. Report on the 2021 Survey of Social Studies Teachers and Supervisors, Maryland State Department of Education. [https://marylandpublicschools.org/about/Documents/DCAA/SocialStudies/2021\\_Social\\_Studies\\_Survey\\_Results.pdf](https://marylandpublicschools.org/about/Documents/DCAA/SocialStudies/2021_Social_Studies_Survey_Results.pdf)

elementary social studies in early grades in order to privilege reading and math instructional time.<sup>54</sup> *The Blueprint* offers Maryland the opportunity to disrupt this approach.

In order to meet the ambitious *Blueprint* goals, Maryland schools need to rethink current practice. Promoting a scheduled course sequencing in social studies that is research based and acknowledges the role of background knowledge on reading development will benefit student learning in both social studies and ELA. As more emerging research suggests, integrating effective, scientifically based ELA instruction into science and social studies classes at the elementary school level “may be a means for reducing later gaps in reading comprehension outcomes.”<sup>55</sup>

The *Blueprint* gives Maryland schools the opportunity to rethink how time is used in elementary grades and to ensure that they provide ample time for students to develop background knowledge in social studies and prepare them for CCR Readiness.

## SUPPORTS FOR TEACHERS AND SCHOOLS – CURRICULUM RESOURCES

### Blueprint Requirements for Curriculum Resources

Adopted by the Maryland State Board of Education in 2010, Maryland’s College and Career Ready Standards in mathematics and English Language Arts identify what PreK-12 students should know and be able to do by the end of each grade level or course, thus ensuring they are ready for college and career upon graduation<sup>56</sup>. Likewise, the Maryland Next Generation Science Standards (NGSS), adopted in 2013, and the Maryland social studies standards, revised and readopted in 2020, lay out what a PreK-12 student should know and be able to do<sup>57</sup>. Each set of state standards for all core disciplines have been approved by the State Board of Education, are supported by instructional frameworks, and are supported by an assessment system (MCAP) aligned with federal and state requirements.

*The Blueprint* requires the MSDE to provide “curriculum standards and curriculum resources for each subject, at each grade level, that build on one another in a logical sequence.” The resources must include:

- Course syllabi
- Sample lessons
- Student work samples that meet proficiency standards
- Explanations of why student work meets standards
- Curriculum units aligned with course syllabi

When aggregated, the curriculum resources should form a “model course” or “unit” and when the units are compiled, they should form “complete courses” that “when taken in sequence” prepare a student to be college and career ready. These materials may be used by schools if they choose to do so, but they must be used to improve instructional practices if an expert review team identifies curriculum as a barrier to student performance in a particular school.

---

<sup>54</sup> Fitchett, P. G., Heafner, T. L., & VanFossen, P. An Analysis of Time Prioritization for Social Studies in Elementary School Classrooms. *Journal of Curriculum and Instruction* (Vol. 8, No. 2, Dec. 2014), pp.7-35. <http://www.joci.ecu.edu/index.php/JoCI/article/viewFile/v8n2p7/pdf>

<sup>55</sup> Cabell, Sonia and HyeJin Hwang. Building Content Knowledge to Boost Comprehension in the Primary Grades (Vol. 55, Issue S1), pp S99-S107 <https://ila.onlinelibrary.wiley.com/doi/10.1002/rrq.338>.

<sup>56</sup> Maryland College and Career Readiness Standards in Mathematics and English. <https://www.marylandpublicschools.org/about/Pages/DCAA/Math/MCCRSMath.aspx>, and <https://www.marylandpublicschools.org/programs/Pages/ELA/MCCR.aspx>.

<sup>57</sup> Ibid.

Currently, the MSDE Teaching and Learning staff are reviewing research on state level curricular materials development and examining state models on high quality curriculum resources to determine a plan to align research with *The Blueprint* expectations for curriculum resources. Three options for the development of these resources include full development by the MSDE, identifying and recommending commercial or open educational materials, or a combination of both options. Once an approach is selected, the MSDE will work in consultation with “highly effective teachers and teachers on the career ladder” to develop resources for each subject.

The development of curricular resources will occur following State Board approval of the third-party research study on what constitutes an effective standard for determining college and career readiness by the end of 10th grade in mathematics and English language arts. If the study recommends that the MSDE revise its standards for English language arts and mathematics, the standards will be revised first and then the curricular materials aligned with the standards will be developed. Science and social studies standards have already been board-adopted and approved, yet the MSDE will wait to develop the curricular resources to support those courses until a final determination is made regarding mathematics and English language arts.

The MSDE is required to provide exemplar curricula and resources for all courses and grade levels that districts and schools can and must use if Expert Review Teams' findings dictate the need to improve instructional practices. To that end, the Office of Teaching and Learning at the MSDE is drafting a *Blueprint* Curriculum Resources Development Plan, which will outline actions needed to revise curriculum standards, resources, and plans for implementation for each of the four core content areas.

Upon completion and approval of a CCR standard for science, social studies, mathematics, and English Language Art, the MSDE must:

- Determine if Maryland's College and Career Ready Standards in mathematics and English Language Arts, Maryland Next Generation Science Standards, and the Maryland's Social Studies Standards and Frameworks align with the respective CCR standard in each discipline and provide a progression from PreK-grade 10.
- Work in consultation with highly effective teachers and teachers on the career ladder to develop curriculum standards and resources for each subject.

## Section 3: Assessments

---

To properly ensure a student's progress toward meeting the CCR standards and all intermediate benchmarks, a series of formative and summative assessments must be developed and administered. These must align with any course and curriculum changes that have been made and also satisfy any ESSA accountability requirements.

The current MCAP assessments for mathematics and ELA were designed to measure a student's knowledge of the standards taught in the course just completed. These do not necessarily measure a student's readiness to succeed in college and the workforce, as this set of skills and knowledge could be a cumulative measure than spans content from multiple years and courses. The robust research studies investigating the knowledge and skills needed to succeed in college and career may conclude that the current MCAP assessments do measure the proper content; however, the alignment research may find that these assessments contain gaps and revisions are needed to the assessments.

If the study shows that MCAP needs to be revised to be an applicable measure of CCR, new assessments for math and ELA must be developed. These would be administered as a standards-setting field test in the 2023-2024 school year, with a full high-stakes administration in the 2024-2025 school year.

### END OF COURSE ASSESSMENTS

Maryland high school students had been required to pass each of four MCAP course assessments (Algebra, English, Science, and Government) to graduate high school and be awarded a diploma. Starting in School Year 2022-2023, MISA Science and Government results will count for 20% of the student's final course grade for the associated course.

### TECHNICAL SKILLS ASSESSMENTS

Technical Skills Assessments are locally-developed, end-of-course assessments that lead to college credit or third-party assessments that lead to a recognized postsecondary credential. Postsecondary credentials may include an industry-recognized certificate or certification, a certificate of completion of an apprenticeship, a license recognized by the State of Maryland or Federal Government, or an associate degree, as defined by section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102). CTE students complete Technical Skills Assessments as part of their CTE programs of study to demonstrate proficiency in content necessary for specific career fields.

### LOCAL ASSESSMENTS

Summative standardized assessments such as SAT, ACT, and state-administered assessments such as the PARCC may not always be the best method of measuring students' college and career readiness. Due to differences in learning needs, students may require alternative methods of properly and accurately demonstrating their knowledge and skills.<sup>58</sup> Nebraska and Vermont<sup>59</sup> have provided support for the identification, development, and administration of local assessments that are aligned with state content standards.<sup>60</sup>

---

<sup>58</sup>Update, C. S. A. I. (2018). Selected Alternatives for Assessing College and Career Readiness. <https://files.eric.ed.gov/fulltext/ED588469.pdf>

<sup>59</sup>Darling-Hammond, L., Rustique-Forrester, E., & Pecheone, R. L. (2005). Multiple measures approaches to high school graduation. Stanford, CA: The School Redesign Network at Stanford University. Retrieved from <https://edpolicy.stanford.edu/sites/default/files/publications/multiple-measures-approaches-high-school-graduation.pdf>

<sup>60</sup>Darling-Hammond, L. (2017). Developing and measuring higher order skills: Models for state performance assessment systems. Washington, DC: Council of Chief State School Officers. Retrieved from <https://www.ccsso.org/sites/default/files/2017-12/AssessmentModelsCCSSOLPI03162017.pdf>

## PERFORMANCE-BASED ASSESSMENTS

Performance-based assessments can be an effective option for states that are interested in using a measure that gauges how students apply their knowledge and skills to real-world problem-solving. This option requires students to perform tasks or to generate their own responses, as opposed to standardized assessments which typically require selection from pre-determined responses. It allows students to demonstrate their higher-order thinking skills and how these skills might apply to college and career contexts.<sup>61</sup> This can be an option for high school students to demonstrate their competence with college-level coursework, and, consequently, their readiness for college and postsecondary work.

## ASSESSMENT ADMINISTRATION STRUCTURE OPTIONS

In addition to the content assessed by the summative CCR assessments and technical skills assessments, the mode of administration of the assessments could also be investigated. These structures could be thoughtfully designed to align more fully with the MSDE guiding principle of ensuring equitable access for all students.

Traditionally, major assessments are administered only at select times during the year with all students in the course taking the assessment in the same time frame. This administration mode has strong historic roots, building from the traditional school model of all students progressing at the same rate and only having the option to move to the next grade level once a year over the summer; however, *The Blueprint* details a vision for students that is more flexible and less constrained to the traditional school calendar. As further explained in Section 4: Post-CCR Pathways, an 11<sup>th</sup> or 12<sup>th</sup> grade student who has not yet met the CCR standard should have the opportunity to prove mastery and enter the Post-CCR Pathways as soon as possible. This vision raises the question of what structures can be implemented to allow students to show mastery as soon as they are ready. A potential answer to this issue is to take advantage of the Every Student Succeeds Act's Innovative Assessment Demonstration Authority (IADA) program which gives states flexibility in how the assessments used for accountability purposes are administered. The states that are participating in IADA have implemented Through-Year Assessments, which break up the large year-end tests into smaller tests that are administered over the course of the school year. These allow for flexible administrations, which can align test timing with associated instructional units; produce results throughout the year that teachers can use to inform and personalize instruction for students; and provide multiple data points on student achievement, reducing the concern that student performance is judged through a single moment in time.<sup>62</sup>

Another potential assessment administration model to consider is to separate the College and Career Readiness assessments from individual courses all together. Proving mastery of College and Career Readiness should be a culminating activity for students as they look toward their next steps and not just a final exam for one class. Maryland could implement an assessment of CCR standards that is computer-adaptive, able to be taken at any point when the student is ready to do so, and is focused on the specific skills and knowledge detailed in the CCR standards. Any new assessments, including computer-adaptive formats, must be designed to ensure accessibility for all students, including those with physical, sensory, and other disabilities.

## CASE STUDIES

### North Carolina

North Carolina: Personalized Assessment Tool is a system of three Through-Course assessment opportunities consisting of three modular interims (based on cluster of standards, not mini-summative)

<sup>61</sup> Cassidy, L., Keating, K., & Young, V. (n.d.). Dual enrollment: Lessons learned on school-level implementation. SRI International. [www2.ed.gov/programs/slcp/finaldual.pdf](http://www2.ed.gov/programs/slcp/finaldual.pdf)

<sup>62</sup> <https://www.nciea.org/blog/educational-assessment/following-their-lead>

where teachers can see items and student responses after administration. The interim assessments are optional and can be administered in any order and time based on local scope and sequencing. The Personalized Assessment Tool provides educators, students, and stakeholders with immediate and detailed feedback on grade level specific content standards so classroom instruction may be tailored to individual students' needs and serves as a reliable indicator to determine appropriate-staged adaptive summative assessment that will provide an academic achievement level for students and for the statewide accountability model.<sup>63</sup>

## Texas

The Texas Assessment Initiative Assessment 2.0 (TSIA2) is the assessment instrument used to determine college readiness for non-exempt students, as required by the Texas Success Initiative. TSIA2 helps determine whether a student is ready for college-level coursework in English language arts and reading (ELAR) and mathematics. Students who score below one or more college readiness benchmarks may be automatically routed to the TSIA2 Diagnostic Test for ELAR and/or mathematics. The score report includes a diagnostic profile based on performance, consisting of descriptors of proficiency in each content category and diagnostic level based on overall performance on the Diagnostic Test.<sup>64</sup>

---

<sup>63</sup> North Carolina Personalized Assessment Tool. North Carolina Department of Public Instruction. <https://www.dpi.nc.gov/districts-schools/testing-and-school-accountability/state-tests/north-carolina-personalized-assessment-tool#development-timeline>

<sup>64</sup> Texas Success Initiative Assessment 2.0 (TSIA2). College Board. <https://accuplacer.collegeboard.org/students/prepare-for-accuplacer/tsia-texas-success-initiative-assessment>

## Section 4: Post-CCR Pathways

---

Students meeting the College and Career Ready (CCR) standard will have access to several Post-CCR pathways at no cost to students. Post-CCR pathways should be flexible, allowing students to develop in-depth knowledge of a subject area, earn postsecondary credits, industry credentials, and/or engage in competitive entry college preparation programs. *The Blueprint* defines three distinct pathways for students to complete Post-CCR requirements. Pathways include a competitive entry college preparatory program, early college or dual enrollment program, or a career and technical education (CTE) program.

Post-CCR pathways provide students with the opportunity to develop in-depth knowledge in a subject area of their choosing. Pathways also enable high school students to earn a specific certificate, license, or other credential that is recognized and valued by the higher education and industry communities. *The Blueprint* specifies that once *Blueprint* policies have been fully implemented (school year 2031-2032), the Post-CCR pathways shall be available only to students who have met the CCR standard. Therefore, Post-CCR pathways are meant to be advanced coursework that would typically be completed in higher education; however, the access to the programs within the Post-CCR pathways during high school means that students can graduate high school to be not only ready for college and career, but also to be immediately ahead of peers from other states and to be competitive for any selective admission process. Additionally, individual courses within a pathway should not be restricted from students. This access to specific classes allows students to continue to explore their elective interests.

There are three Post-CCR pathways detailed in *The Blueprint*:

- Advanced Placement (AP) or International Baccalaureate (IB) programs
- Dual enrollment or early college programs
- Career and Technical Education (CTE) programs

The MSDE will continue to engage local school systems, post-secondary education institutions, and best practices research to develop and propose specific policies for pathway requirements. Each student will select and enroll in one of the Post-CCR pathways once they meet the CCR standard. Many students will meet the CCR standard at the end of the 10<sup>th</sup> grade, so the pathway requirements may be completed in the 11<sup>th</sup> and 12<sup>th</sup> grade. Alternatively, students may be encouraged to enter a pathway as early as 9<sup>th</sup> grade, especially with CTE pathways, as students may attain CTE Concentrator status by the end of 10<sup>th</sup> grade.

Each of the Post-CCR pathways will allow for in-depth specialization in the chosen area as well as opportunities to explore additional subjects. While the specific pathway requirements have not yet been set, a pathway may require the student to earn credits for four or five courses that may also satisfy traditional course sequences and graduation requirements.

For students entering 9<sup>th</sup> grade in school year 2021-2022 or later, graduation requires course credit in the following courses:<sup>65</sup>

- English – 4 credits
- Mathematics – 4 credits
- Science – 3 credits

---

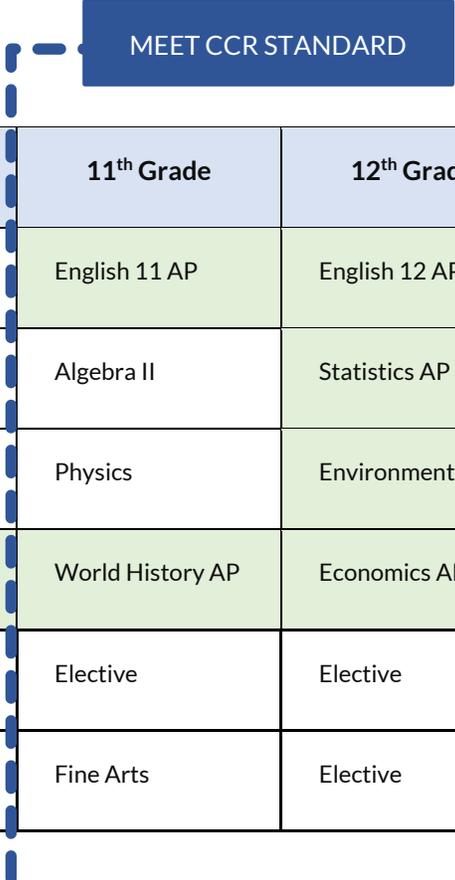
<sup>65</sup> Full Enrollment and Credit Requirements for graduation are available here: <http://www.dsd.state.md.us/comar/comarhtml/13a/13a.03.02.03.htm>

- Social Studies – 3 credits
- Fine Arts – 1 credit
- Physical Education – 1/2 credit
- Health – 1 credit
- Technology Education – 1 credit
- Program choice – 2 credits in the same World Language or 2 credits in an approved Advanced Technology Program, or 3+ credits in a State-approved Career and Technical Education Program

### SAMPLE STUDENT COURSE SCHEDULES

The following example course schedules give a glimpse into how students may complete a Post-CCR Pathway while also fulfilling all graduation requirements and have room to explore elective interests. Shaded courses will count toward a pathway’s requirements. Any blank spaces indicate open electives or space for other graduation requirements.

#### Progression 1: Advanced Placement (AP) program



	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
<b>English</b>	English 9	English 10	English 11 AP	English 12 AP
<b>Math</b>	Algebra I	Geometry	Algebra II	Statistics AP
<b>Science</b>	Biology	Chemistry	Physics	Environment Sci AP
<b>Social Studies</b>	US History	US Government AP	World History AP	Economics AP
<b>Elective</b>	Health/PE	Technology	Elective	Elective
<b>Elective</b>	World Language	World Language	Fine Arts	Elective

**Progression 2: Dual Enrollment program: 60 credits**

MEET CCR STANDARD

	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade Fall	11 <sup>th</sup> Grade Spring	12 <sup>th</sup> Grade Fall	12 <sup>th</sup> Grade Spring
<b>English</b>	English 9	English 10 <sup>^</sup> - 3	English 11 <sup>*</sup> : 3	Elective <sup>*</sup> : 3	English 12 <sup>*</sup> : 3	Elective <sup>*</sup> : 3
<b>Math</b>	Geometry	Algebra II	PreCalc <sup>*</sup> : 3	Elective <sup>*</sup> : 3	Statistics <sup>*</sup> : 4	Elective <sup>*</sup> : 3
<b>Science</b>	Biology	Chemistry	Science Elective <sup>*</sup> : 4	Science Elective <sup>*</sup> : 3	Elective <sup>*</sup> : 3	Elective <sup>*</sup> : 3
<b>Social Studies</b>	US History	US Government		World History <sup>*</sup> : 3	Elective <sup>*</sup> : 3	Elective <sup>*</sup> : 3
<b>Elective</b>	Health/PE	Fine Arts <sup>^</sup> : 3				
<b>Elective</b>	World Language <sup>^</sup> : 4	World Language <sup>^</sup> : 4				

<sup>^</sup> Courses taken at HS. <sup>\*</sup> Courses taken at community college

**Progression 3: Dual Enrollment program: 30 credits**

MEET CCR STANDARD

	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade Fall	12 <sup>th</sup> Grade Spring
<b>English</b>	English 9	English 10	English 11 <sup>^</sup> : 3	English 12 <sup>*</sup> : 3	English Elective <sup>*</sup> : 3
<b>Math</b>	Algebra I	Geometry	Algebra II	Statistics <sup>*</sup> : 3	Elective <sup>*</sup> : 3
<b>Science</b>	Biology	Chemistry	Physics 1 AP	Biology <sup>*</sup> : 4	Elective <sup>*</sup> : 3
<b>Social Studies</b>	US History	US Government	World History <sup>^</sup> : 3	Psychology <sup>*</sup> : 3	Elective <sup>*</sup> : 3
<b>Elective</b>	Health/PE	Technology	Fine Arts <sup>^</sup> : 3		
<b>Elective</b>	World Language	World Language	Elective		

**Progression 4: Career and Technical Education (CTE):  
Construction – Carpentry**



	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
<b>English</b>	English 9	English 10	English 11	English 12
<b>Math</b>	Algebra I	Geometry	Algebra II	Math Elective
<b>Science</b>	Biology	Chemistry	Physics	Elective
<b>Social Studies</b>	US History	US Government	Elective	Carpentry II
<b>Elective</b>	Health/PE	Technology	Carpentry I	
<b>Elective</b>	Fine Arts	Elective	Construction Core	Apprenticeship

**Progression 5: Career and Technical Education (CTE): Construction – Carpentry:  
CTE Concentrator used as CCR standard**



	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
<b>English</b>	English 9	English 10	English 11	English 12
<b>Math</b>	Algebra I	Geometry	Algebra II	Math Elective
<b>Science</b>	Biology	Chemistry	Physics	Elective
<b>Social Studies</b>	US History	US Government	Fine Arts	Elective
<b>Elective</b>	Health/PE	Technology	Carpentry I	Carpentry II
<b>Elective</b>	Construction Foundations	Carpentry Core	Credential Exam Prep	Apprenticeship

## CAREER AND TECHNICAL EDUCATION (CTE) PROGRAMS

As with other Post-CCR pathways, students in CTE programs will be allowed to enroll in CTE courses prior to meeting the CCR standard. Several CTE programs take up to four years for students to accumulate hours required to earn industry certifications while concurrently completing all graduation requirements. For example, students in the cosmetology CTE program must complete 1,500 hours of theory and practical application to become a licensed cosmetologist. Students in food and beverage management CTE programs must complete all classroom-related instruction and at least 400 hours of work-based learning experiences. Students must start these CTE programs in grades 9 or 10 to meet graduation and licensing requirements.

### Apprenticeships / Industry Credentials

*The Blueprint* sets a goal for 45% of high school students completing an apprenticeship or an industry-recognized occupational credential by the 2030-2031 school year. The ambitious goal of nearly half of the state's high school students participating in apprenticeships indicates the priority of this initiative and the immense benefits that students and employers can gain. A strong apprenticeship program enables students to gain robust on-the-job training that enables them to complete the apprenticeship with a competency in that industry. An apprenticeship could consist of a three-year commitment where the student completes on-the-job training, contributes to production, and receives related classroom instruction.

Students benefit greatly from this model by continuing their academic studies and graduating high school in the traditional four-year timeframe while also developing highly valuable industry-specific skills. After the completion of the apprenticeship, the students can either continue working at that company, or be highly competitive when applying for other positions. Employers are also critical partners and eager participants based on the benefits of employing apprentices, including their quick-learning, high productivity, energy, enthusiasm, and opportunities to develop their current staff through the training process.

### Intermediaries

Achieving *The Blueprint's* goal of having 45% of students completing an apprenticeship requires the development of a full system with shared visions and support from all relevant partners including employers, apprentices, schools, government agencies, and other service providers. As it can be a daunting task to try to match students and employers, an organization that acts as an intermediary can be a vital asset. Intermediaries relieve the burden from the student or the school to facilitate the connections and ensure that each partner is benefitting and has specific needs met. CareerWise Colorado, one such intermediary, was able to place more than 600 apprentices with 179 employers in the first five years of operation.<sup>66</sup>

Maryland school systems also currently work with the youth apprenticeship employer partners to identify a schedule that works for both the employer and youth apprentice. MSDE has identified a number of ways in which youth apprentices can complete the classroom-related instruction. It can be done at the apprentice's high school, at the apprentice's work site, at the community college, or through an online course. These options provide students with the needed flexibility necessary to graduate high school and be a youth apprentice.

CareerWise, which provides apprenticeship intermediary services, outlines their three-year program, where students phase out their time in traditional high school coursework and phase in more time with on-the-job training and industry specific coursework to develop the apprentice fully.<sup>67</sup>

---

<sup>66</sup> Apprenticeship programs in Colorado help grow workforce, give students path to career. Nicole Brady. ABC7.

<https://www.thedenverchannel.com/news/local-news/apprenticeship-programs-in-colorado-help-grow-workforce-give-students-path-to-career>

<sup>67</sup> Katz, Batia, and Diana Elliott. 2020. CareerWise: Case Study of a Youth Apprenticeship Intermediary. Washington, DC: The Urban Institute.

Figure 20

HOW IT WORKS	YEAR 1	YEAR 2	YEAR 3
<b>HIGH SCHOOL</b> ACADEMIC CLASSES	THE EQUIVALENT OF 3 DAYS PER WEEK	THE EQUIVALENT OF 2 DAYS PER WEEK	NONE
<b>ON-THE-JOB</b> TRAINING	12-16 HOURS PER WEEK	20-24 HOURS PER WEEK	32+ HOURS PER WEEK
<b>ADDITIONAL COURSEWORK</b> PATHWAY- AND OCCUPATION- SPECIFIC INDUSTRY CERTIFICATIONS AND HIGHER-ED COURSEWORK	<b>ON THE JOB UPSKILLING &amp; CERTIFICATION</b> APPRENTICE UPSKILLS FOR SPECIFIC OCCUPATION AND EARNS AN INDUSTRY RELEVANT CERTIFICATION.		HIGHER-ED COURSEWORK APPROVED BY BUSINESS AND APPRENTICE.

### Apprenticeships in Maryland

While apprenticeships in the US have commonly been concentrated in the construction trades, these opportunities can exist in any industry. Maryland's current Career and Technical Education (CTE) programs consist of career clusters in Arts, Media, and Communications; Business Management and Finance; Construction and Development; Consumer Services, Hospitality, and Tourism; Environmental, Agriculture, and Natural Resources; Health and Bioscience; Human Resource Services; Information Technology; Manufacturing, Engineering and Technology; and Transportation Technologies. Any of these areas can support an apprenticeship evidenced by established program opportunities in IT, education, health care, and more.

The Apprenticeship Maryland Program is a Career and Technical Education (CTE) program of study implemented in partnership with the Maryland Department of Labor. The program consists of at least one year of related classroom instruction and a workplace component of at least 450 hours. The workplace component is a mentored, on-the-job, work experience where students are paid at least minimum wage. The experience is guided by a Student Rating/Work-based Training Plan and a formal agreement among the student, school, and employer. The Apprenticeship Maryland Program began its first pilot implementation in 2016-2017 and now has nearly 300 employers actively participating, representing industries including architecture, healthcare, construction, hospitality, manufacturing, government, and others.<sup>68</sup> The MSDE publishes data dashboards that display CTE student enrollment, performance outcomes, earned industry credentials, and participation in work-based learning experiences disaggregated by race, gender, and student service group.<sup>69</sup>

Career and technical education assessments are called Technical Skills Assessments (TSA). TSAs are end-of-course assessments that lead to college credit or third-party assessments that lead to a recognized postsecondary credential, such as an industry-recognized certificate or certification, a certificate of completion of an apprenticeship, or an associate degree. A comprehensive list of approved TSAs in Maryland along with accommodations for each assessment and data for the number of CTE students who attained a credential or postsecondary credit from completion of TSAs can be found on the Maryland CTE Data Dashboards.<sup>70</sup>

<sup>68</sup> Youth Apprenticeship Advisory Committee Annual Report 2021. Maryland Department of Labor. <http://www.labor.maryland.gov/employment/appr/youthapprannrep2021.pdf>

<sup>69</sup> CTE Dashboards. MSDE. <https://www.mdctedata.org/dashboards/enrollment.php>

<sup>70</sup> Maryland CTE Data Dashboards. <https://www.mdctedata.org/dashboards/technicalskillsassessments.php>

## CTE Coordination in Maryland

MSDE collaborates proactively with stakeholders to revise the vision and direction for CTE. The revised vision for CTE in Maryland is grounded in ensuring that each student has access and opportunity to engage in career programs of study that align to high-skill, high-wage, and in-demand careers; lead to earning industry-recognized and/or postsecondary credentials that allow for entrance or advancement in a career field; and provide work-based learning experiences that require the application of academic and technical knowledge and skills in a work setting. Outcomes of the review informed revisions to industry credentials that students can earn, standards used for CTE courses, and credits required to graduate as a CTE completer. A Comprehensive Review of Standards, Credits, and Credentials for each CTE Program of Study was published in September 2020.<sup>71</sup> The Maryland Career and Technical Education Four-Year State Plan was intentionally developed to align with the goals of *The Blueprint*.<sup>72</sup>

The MSDE is actively working to increase the number of students who complete these programs. The MSDE provided grants to school systems to expand apprenticeship programs and supported building awareness and promoting apprenticeship opportunities in school systems. For example, the MSDE supported “Signing Days” for students and created videos to promote apprenticeships statewide.<sup>73</sup> Additionally, to increase the number of industry credentials, the MSDE has expanded the number of available credentials that students can earn, facilitated grant programs that support preparation and administration of credential exams, and developed work-based learning data dashboards to share work-based learning participation, wages, student preparedness, and employer satisfaction. The MSDE has also recently launched its Maryland Leads grant program that enables local school systems to access grant funds to build and expand apprenticeship programs.<sup>74</sup>

## CASE STUDIES

### TranZed Academy for Working Students (TAWS) – Montgomery County, MD

The TranZed Academy for Working Students (TAWS) program helps working high school students prepare for life after graduation through flexible school schedules and career coaching. The program is designed to build on a student’s strengths while turbocharging their career path. TAWS builds students’ academic programs and schedules around their jobs and career goals. For example, students take high school and college courses in person and online. This flexibility gives them the opportunity to work more hours and earn more money. In addition, each participant works one-on-one with a career coach to design Individual Career Plans (ICPs).<sup>75</sup>

TAWS is built on several pillars. These include:

- Flexible study options and scheduling, including online, face-to-face, early college classes, or a combination;
- Self-paced curriculum for students to learn at their pace;

---

<sup>71</sup> Comprehensive Review of Standards, Credits, and Credentials for CTE Each Program of Study. MSDE. [https://www.marylandpublicschools.org/programs/Documents/CTE/CTE\\_Programs\\_of\\_Study.pdf](https://www.marylandpublicschools.org/programs/Documents/CTE/CTE_Programs_of_Study.pdf)

<sup>72</sup> Maryland Career and Technical Education Four-Year State Plan. MSDE. [https://www.marylandpublicschools.org/programs/Documents/CTE/PerkinsV/Resources/MD\\_PerkinsV\\_4yrStatePlan.pdf](https://www.marylandpublicschools.org/programs/Documents/CTE/PerkinsV/Resources/MD_PerkinsV_4yrStatePlan.pdf)

<sup>73</sup> Empowering the Workforce of the Future. MSDE. [https://www.marylandpublicschools.org/programs/Pages/CTE-Programs-of-Study/CTE\\_Videos/Index.aspx](https://www.marylandpublicschools.org/programs/Pages/CTE-Programs-of-Study/CTE_Videos/Index.aspx)

<sup>74</sup> The Maryland Leads Initiative. MSDE. <https://www.marylandpublicschools.org/MDLeads>

<sup>75</sup> How the TAWS Program Helps Working Students. TranZed Academy for Working Students <https://tranzedacademy.org/how-does-taws-work/>

- Career coaching to help students explore and navigate their career options even as they learn and earn; and
- Assisting students in developing and learning to utilize social capital or the networks of individuals who can help them identify and benefit from education and career opportunities.
- On-demand academic support through tutoring.
- Support in navigating the complexities of work, school, and relationships as young people become adults.

Students are concurrently enrolled at their home high school and in the TAWS program, allowing them to benefit from the education and support services of their home high school and TAWS. These students can take courses to complete their high school diploma in one of three ways: (1) through one of the online education providers approved by the State of Maryland, (2) through face-to-face or online courses at Montgomery College, the county's community college, or (3) by completing the courses face-to-face at their home high school. Given their responsibilities and workloads, the students are provided with more support through TAWS than a traditional high school student might otherwise receive.

### Denver Public Schools

Denver Public Schools has around 20 schools participating in the CareerWise youth apprenticeship program. It has invested more in apprenticeship than other public school systems across the country. The district has a dedicated team focused on the apprenticeship program within DPS's Career and College Success Department. Among other tasks, this team acts as case managers for students in the apprenticeship program, helping them navigate their new schedules. Having a dedicated apprenticeship staff makes it far smoother for DPS students to participate in apprenticeships. Beyond staffing, DPS has invested heavily in youth apprenticeship in terms of scheduling hours. All schools with apprentices in the program have adjusted their schedules, either allowing apprentices to use block scheduling and only come in two or three days a week or allowing students to use whole afternoons for their apprenticeship. The district has worked to ensure students can fit core classes into this compressed schedule. The investment on behalf of DPS, as well as CareerWise's close partnership with the schools, has allowed it to scale the program. CareerWise has more than 90 apprentices across the DPS district.<sup>76</sup>

---

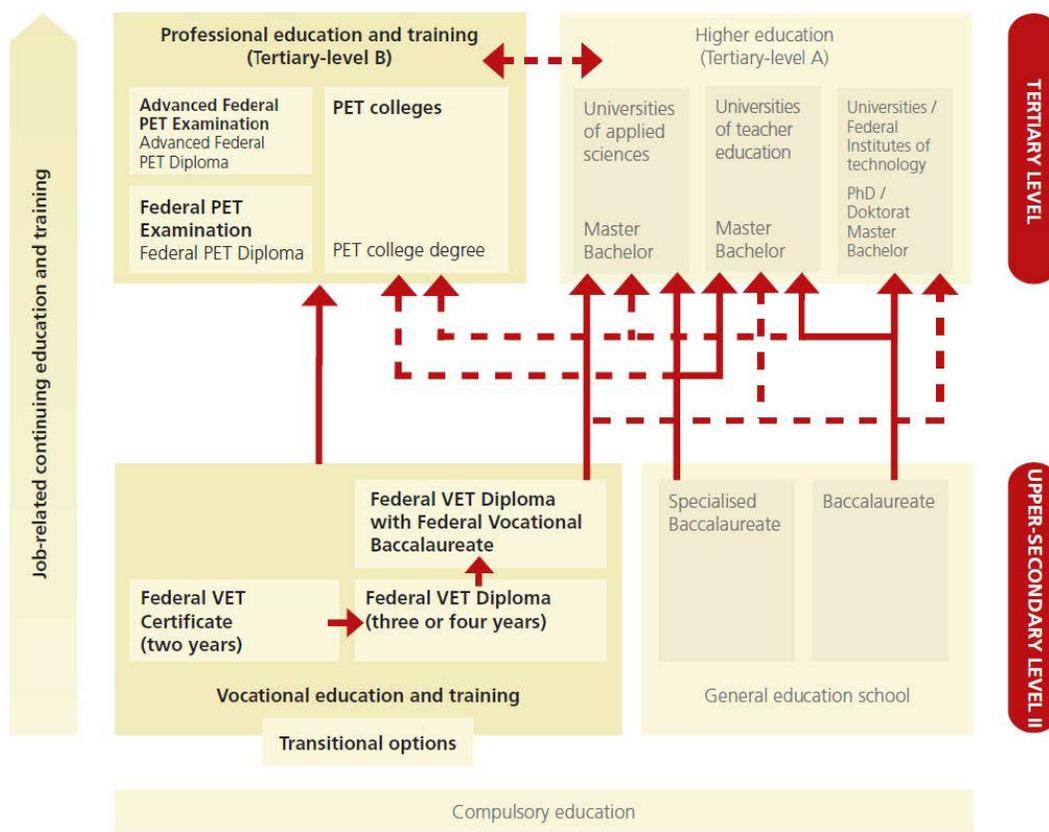
<sup>76</sup> Katz, Batia, and Diana Elliott. 2020. CareerWise: Case Study of a Youth Apprenticeship Intermediary. Washington, DC: The Urban Institute.

## Switzerland

The Swiss "dual" vocational education and training (VET) system is recognized around the world as a model for integrating workplace and academic training. The upper secondary system serves 70 percent of young Swiss people and enjoys strong support from employers across the country.<sup>77</sup> The established Swiss model of apprenticeship works well because of Swiss investment and belief in the apprenticeship system—all parts of society from government to business to education are involved, and there is general recognition that apprenticeship is a quality route to careers. Approximately 240 apprenticeship occupations exist, and over 40 percent of companies participate.<sup>78</sup>

Most VET programs are of the dual-track variety, i.e. training content is divided between different learning locations (part-time classroom instruction at a vocational school, part-time workplace training at a host company and for some occupations also branch courses at a branch training center). The school-based variety of VET program (i.e. full-time classroom instruction, no apprenticeship) is less common in Switzerland. Tertiary-level professional education also combines classroom instruction with work-based training, thereby ensuring a smooth transition from dual-track VET programs.

Figure 21: Swiss Education VET System<sup>79</sup>



<sup>77</sup> Swiss vocational education and training model: the recipe for success? Ashley Musseau. EHL Insights. <https://hospitalityinsights.ehl.edu/swiss-vocational-education-training-model>

<sup>78</sup> Katz, Batia, and Diana Elliott. 2020. CareerWise: Case Study of a Youth Apprenticeship Intermediary. Washington, DC: The Urban Institute.

<sup>79</sup> Nancy Hoffman and Robert Schwartz, "Gold Standard: The Swiss Vocational Education and Training System" (Washington, DC: National Center on Education and the Economy, 2015).

## Section 5: Student Support Pathway

*The Blueprint* builds a vision of a school environment where any student who needs additional supports beyond the standard instructional expectations has access to and benefits from these supports as much as necessary. A major component of these additional supports is the Support Pathway for 11th and 12th grade students who have not yet demonstrated readiness for college and career. These students will receive appropriate individualized services, support, and instruction, which may include culturally responsive lessons, a project-based and problem-based pedagogy, and varied instructional timing. As soon as possible and before graduation, these students will have another opportunity to demonstrate their CCR abilities and move from the Support Pathway to a Post-CCR Pathway.

Collaboration between the school system and community colleges shall result in the development and implementation of a program of study in the 11th and 12th grade for each student who has not demonstrated progress in meeting the CCR readiness standard by the end of 10th grade. Each program of study must consider:

- An Individualized College and Career Readiness Plan that outlines expectations for students in meeting the CCR Standard
- A team of teachers charged with monitoring student progress toward CCR readiness
- A meeting with parents or guardians to plan for student success by providing public and private resources to support student success
- Courses that provide students with opportunities for applied, experiential, and engaging opportunities to meet the CCR standard in mathematics and English
- An opportunity to reassess to determine CCR readiness as soon as possible and before graduation.

As school systems prepare to implement College and Career Readiness supports for students who have yet to achieve CCR, it is essential to maintain and provide all the services in compliance with state and federal law. It is also important to consider student service group populations, including special education, English learners, and students who attend schools that receive Title I, Part A funds. Title I, Part A (Title I) of the Elementary and Secondary Education Act, as amended by the Every Student Succeeds Act (ESSA) provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to ensure that all children meet challenging academic standards.

*The Blueprint* sets the expectation that all students who have not yet met the CCR Standard by the end of their 10<sup>th</sup> grade year be enrolled in an extended curriculum with alternative approaches tailored to their respective needs. Currently, the MSDE is researching effective structures for summer immersion programs; before, during, and after school tutoring models; extended curriculum classes to be developed in consultation with the community colleges; and other innovative modes of delivery for non-CCR students. This research will enable the MSDE to provide clear and actionable guidance for school systems on how best to meet the needs of students not yet CCR at the end of 10th grade. These interventions must be supported by research and aligned with legal and educational requirements. The opportunities provided to each student to achieve CCR will vary based on factors such as:

- If the student is not CCR in one or both of the subjects
- If the student is successful with their first intervention or requires subsequent intervention
- If the student achieves CCR in one subject after intervention but still requires more intervention in the other subject

- If the student is assessed in the winter, spring, or summer administration of the CCR assessments
- If the student is demonstrating or meeting the credit requirements for graduation

### EVIDENCE-BASED SUPPORTS AND STUDENT SCENARIOS

Many options for high school course progressions can be developed based on each student’s individual needs. These course progressions can also be used when contemplating similar structures for elementary and middle school students preparing for high school. To that end, the MSDE has collaborated internally and with school system partners to offer scenarios of Student Support Pathways. These examples are not exhaustive, and many students will follow other course progressions not detailed in this report. Below are some options for schools and school systems to consider.

#### Possible Student Support Pathway 1:

**Scenario:** The student does not pass the Algebra I assessment in 9th grade or the Geometry or English 10 assessments in 10th grade. A recommendation could be:

- The student is provided with an Individualized College and Career Readiness Plan that outlines what the student needs to do to meet the CCR standard. The student is provided the opportunity to enroll in summer immersion classes. Summer immersion classes are centered around project-based or problem-based learning. The student is also able to take elective classes over the summer. Testing will need to be provided at the end of the summer immersion course to determine the extent to which the student has made progress toward meeting the CCR standard.
- Throughout, a team of teachers is charged with monitoring student progress toward CCR using summative and formative assessment metrics aligned with the content standards.
- Meetings throughout the process take place with parents/guardians, teachers, and students to plan for public and private resources to support student success.

Student Support Pathway 1	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	Summer	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
English	English 9	English 10	English PBL Immersion	English 11	English 12
Math	Algebra I	Geometry	Math PBL Immersion	Algebra II	Elective
Science	Biology	Chemistry		Physics	Elective
Social Studies	US History	US Government		World History	Psychology AP
Elective	World Language	World Language	Elective	Computer Science	Computer Science AP
Elective	Health/PE	Fine Arts		Elective	Technology

**Outcome:** At the end of the summer immersion program, the student passes the English 10 and Algebra II assessments, meeting the CCR standard.

**Possible Student Support Pathway 2:**

**Scenario:** The student does not pass the Algebra I assessment in 9th grade (or the Geometry assessment) but does pass the English 10 assessment in 10th grade. A recommendation could be:

- The student is provided with an Individualized College and Career Readiness Plan that outlines what the student needs to do to meet the CCR standard. The student is provided the opportunity to enroll in summer immersion classes. Summer immersion classes are centered around project-based or problem-based learning. The student is also able to take elective classes over the summer. Testing will need to be provided at the end of the summer immersion course to determine the extent to which the student has made progress toward meeting the CCR standard.
- Throughout, a team of teachers is charged with monitoring student progress toward CCR using summative and formative assessment metrics, aligned with the content standards.
- Meetings throughout the process take place with parents/guardians, teachers, and students to plan for public and private resources to support student success.

Student Support Pathway 2	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	Summer	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
English	English 9	English 10		English 11	English 12
Math	Algebra I	Geometry	Math PBL Immersion	Algebra II	Elective
Science	Biology	Chemistry		Physics	Elective
Social Studies	US History	US Government		World History	Psychology AP
Elective	World Language	World Language		Computer Science	Computer Science AP
Elective	Health/PE	Fine Arts		Elective	Technology

**Outcome:** At the end of the summer immersion program, the student passes the mathematics assessment, meeting the CCR standard.

### Possible Student Support Pathway 3:

**Scenario:** The student passes the English 10 assessment but does not pass the Algebra I or Geometry assessments. The student does not elect to enroll in summer courses. The student does not pass the Algebra I assessment in 9th grade or the Geometry or English 10 assessments in 10th grade. A recommendation could be:

- Student is provided with an Individualized College and Career Readiness Plan that outlines what the student needs to do to meet the CCR standard. The plan enrolls the student in after school tutoring during the 11th grade. Testing will need to be provided at the end of the summer course.
- A team of teachers is charged with monitoring student progress toward CCR.
- A meeting with parents or guardians takes place to plan for student success by providing public and private resources to support student success.

At the end of the 11th grade, the student passes the English 10 and Algebra II assessments, meeting the CCR standard.

MEET CCR STANDARD

Student Support Pathway 3	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
<b>English</b>	English 9	English 10	English 11 AP	English 12 AP
<b>Math</b>	Algebra I	Geometry	Algebra II	Math Elective
<b>Science</b>	Biology	Chemistry	Physics	Science Elective
<b>Social Studies</b>	US History	Us Government	World History	Economics AP
<b>Elective</b>	World Language	World Language	Elective	Elective
<b>Elective</b>	Health/PE	Fine Arts	Technology	Elective
			Math Tutoring	

**Outcome:** The student is required to participate in an after-school tutoring program at least two days a week. At the end of the 11th grade, the student passes the English 10 and Algebra II assessments, meeting the CCR standard.

**Possible Student Support Pathway 4:**

**Scenario:** The student does not pass the Algebra I course in 9<sup>th</sup> grade and the English 10 course in 10<sup>th</sup> grade. The student retakes these courses during the next year, which extends their high school career beyond four years to meet graduation requirements. At the end of the 10<sup>th</sup> grade, the student is determined to be not college and career ready (CCR) in mathematics and English.

- Student is provided with an Individualized College and Career Readiness Plan that outlines what the student needs to do to meet the CCR standard. The student elects not to enroll in summer coursework or stay after school for academic tutoring, thus the student receives support with explicit instruction during the school day. This support can take different forms, including project-based learning, tutoring (one-to-one or small group), or a scheduled class. There must be instruction to address the student's specific area of weakness impacting the ability to meet the CCR standard. An individualized plan (e.g., IEP) will be designed to prepare the student for success in meeting the CCR standard(s).
- A team of teachers is charged with monitoring student progress toward CCR.
- A meeting with parents or guardians takes place to plan for student success by providing public and private resources to support student success.

MEET CCR STANDARD

Student Support Pathway 4	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade	12 <sup>th</sup> +
English	English 9	English 10	English 10 (retake)	English 11	English 12
Math	Algebra 1	Algebra 1 (retake)	CCR Mathematics	Geometry	Statistics
Science	Biology	Chemistry	Physics	Science Elective	Science Elective
Social Studies	US History	US Government	World History	Carpentry I	Carpentry II
Elective	Health/PE	Elective Study Skills/Enrichment	CCR English Support	CCR Support or Elective	Elective
Elective	Financial Literacy	Technology	Fine Arts	Construction Core	Work-based learning

**Outcome:** at the end of the 12<sup>th</sup> grade, the student passes the English 10 and geometry assessments, meeting the CCR standard.

**Possible Student Support Pathway 5:**

**Scenario:** A CTE student is not CCR ready at the end of 10th grade in either mathematics or English.

- Student is provided with an Individualized College and Career Readiness Plan that outlines what the student needs to do to meet the CCR standard. The student enrolls in summer coursework but does not reach CCR at the conclusion of the courses. In the 11th grade, the student accesses after school academic tutoring.
- A team of teachers is charged with monitoring student progress toward CCR.
- A meeting with parents or guardians takes place to plan for student success by providing public and private resources to support student success.

Student Support Pathway 5	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	Summer	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
English	English 9	English 10	English Immersion	English 11	English 12
Math	Algebra I	Geometry	Math Immersion	Algebra II	Elective
Science	Biology	Chemistry		Physics	Elective
Social Studies	US History	US Government		World History	
CTE	CTE Course 1	CTE Course 2	CTE Work-based Learning	CTE Course 3	CTE Work-based Learning
Elective	Health/ PE	Fine Arts		Computer Science	CTE Work-based Learning
				English Tutoring	
				Math Tutoring	

MEET CCR STANDARD

Outcome: Student achieves CCR readiness at the end of 11th grade.

## STUDENT POPULATIONS

In addition to the supports and pathways discussed above, certain student populations are entitled to and will benefit from additional initiatives.

### Special Education

Under the Individuals with Disabilities Education Act (IDEA), eligible students with disabilities are entitled to a free appropriate public education (FAPE). The local school system is responsible for convening an Individualized Education Program (IEP) or Section 504 Plan planning team to develop an educational program, including special education and related services designed to meet the unique needs of the individual student. The IEP or Section 504 Plan process involves individual student data collection and analysis, program design and implementation, and progress monitoring to ensure the student has access to the general education curriculum and standards.

As local school systems implement the new CCR standards and assessments, they should consider ways in which to build the CCR support pathways into the IEP or Section 504 Plan process for eligible students. For example, data from the CCR assessment and formative assessment measures should be included in the student's present level of academic achievement and functional performance. This information will inform the development of the student's IEP or Section 504 Plan goals and objectives, which moves the student toward meeting CCR standard. IEP and Section 504 Plan teams will develop individual goals including those that address grade level standards to narrow the learning gap.

The IEP or Section 504 Plan provides specially designed instruction, which includes accommodations, assistive technology needs, adaptations to general education instruction, supplementary aids and services, program modifications, and supports for personnel and families that enable the student to make meaningful progress on goals and in the general education curriculum.

The IEP or Section 504 Plan team should use the evaluation and progress monitoring tools continuously (e.g., benchmark assessments, formative assessments, summative assessments, standardized assessments, etc.) to determine the student's progress and to identify any gap between the student's academic performance and the CCR standards. This allows the IEP or Section 504 Plan team to make early and appropriate changes to the student's IEP or Section 504 Plan.

Critical to the effective development, implementation, and evaluation of an IEP or Section 504 Plan is a comprehensive school-wide Integrated Tiered System of Academic and Behavioral Supports that includes:

- Efficient and effective collaborative teaming structures for general and special educators and related service providers
- Data systems that range from formative assessment to universal screening and robust progress monitoring to inform instructional decisions
- Adoption and implementation of evidence-based instructional and intervention practices to provide specially designed instruction to students with disabilities, with fidelity, to narrow school readiness and achievement gaps
- Inclusive educational opportunities, including access to general education curriculum and nondisabled peers
- Parental engagement in the IEP and Section 504 Plan process, including Secondary Transition Planning, where the parent is supported in active and informed decision-making that contributes to their child's success
- Professional learning and coaching with monitoring for fidelity of implementation of practices

The MSDE provides guidance to local school systems on applications of a system of instruction and support research on the impact of learning the core curriculum in general education classes, supplemented by interventions and specially designed instruction. Students with disabilities must be provided with equal access to the educational environment, including the support pathways offered to all students. In order to ensure equal access and meaningful participation, the local school system must provide students with disabilities with the accommodations, modifications, and related services included in their IEP or Section 504 Plan. This includes transportation if the student requires it as a part of the IEP/Section 504.

### English Learners

Students who are identified as English learners (EL) are required to receive English language development (ELD) instruction to address their English language proficiency development. ELs also need to meet the same challenging academic standards that all students are expected to meet. It is imperative that educators working with ELs understand the English language proficiency levels of their students. This allows educators to individualize instruction based on the unique needs of ELs. English learners who have not met the CCR standard may benefit from the following instructional strategies:

- Use home language to clarify key concepts
- Access prior knowledge and build background knowledge
- Use visual support and a variety of scaffolds to increase comprehensibility
- Incorporate hands-on or project-based learning
- Provide additional wait and processing time
- Build in intentional opportunities for interaction
- Use a variety of assignments and assessment tools aligned to language proficiency levels

Using bilingual instruction and assessment is an additional opportunity for customizing instruction for English learners.

Additional information on best practices for instructional strategies for supporting ELs is available in MSDE's Workgroup on English Learners in Public Schools Interim Report.<sup>80</sup>

---

<sup>80</sup> MSDE's Workgroup on English Learners in Public Schools Interim Report.  
<https://www.marylandpublicschools.org/Blueprint/Documents/Reports122021/ELWorkgroupInterimReport.pdf>

## Section 6: Early Warning Indicators

A crucial design principle within *Blueprint* is to identify students who are not on target to meet the CCR standard on time and identify which students will need additional support prior to the administration of the CCR assessment for mathematics and English.

*The Blueprint* requires that students in middle and high school who are not progressing toward CCR must be:

- Enrolled in an extended curriculum with alternative approaches embedded into the coursework that are tailored to a student's specific circumstances
- Allowed to transition out of the extended curriculum if their progress toward CCR accelerates

To ensure the accurate and ongoing identification of students in need of assistance, school systems must construct systems to aggregate data that assist in the early identification of students who are not on track to be CCR in mathematics and/or English by the end of 10th grade. This data should be curated and examined beginning in elementary school, continued in the middle grades, and utilized in 9th grade to align students' needs with a path to CCR readiness. Research <sup>81</sup> from multiple sources <sup>82</sup> indicates that data collected should include, but not be limited to:

- Daily attendance
- Performance on interim assessments aligned to the CCR standards in mathematics and English for each grade level
- Performance on the Kindergarten Readiness Assessment (KRA)
- Course grades (particularly in middle and high school)
- Credits progression toward graduation at the end of ninth grade <sup>83</sup>

### EARLY WARNINGS IN ELEMENTARY AND MIDDLE SCHOOLS

The MSDE advocates that monitoring of early warning signs in English language arts and mathematics begin as early as kindergarten. The MSDE research comparing the KRA and PARCC grade 3 data in Maryland demonstrates that students at the end of grade 3 PARCC were exhibiting the same areas of risk in reading and mathematics as they did on the KRA upon entering kindergarten. Using the KRA as a baseline, further data from elementary school should focus on English language arts and mathematics. Research has shown that early literacy has a significant relationship to graduation rates across a variety of contributing factors. The Annie E. Casey Foundation (2010) conducted a long-term study that showed students who were not proficient in reading by the end of third grade were four times more likely to drop out of high school than

<sup>81</sup> College and Career Readiness Early Warning System (CCREWS). Wisconsin Department of Public Instruction. <https://dpi.wi.gov/ews/college-career-readiness>

<sup>82</sup> Evidence-Based Practices to Support College and Career Readiness in High School. Early Warning Indicators. College & Career Readiness & Success Center At American Institutes For Research. [https://ccrcenter.org/sites/default/files/EvidenceBasedPractices\\_EarlyWarningIndicators.pdf](https://ccrcenter.org/sites/default/files/EvidenceBasedPractices_EarlyWarningIndicators.pdf)

<sup>83</sup> Allensworth, Elaine and Easton, John (2005). The On-Track Indicator as a Predictor of High School Graduation. <https://consortium.uchicago.edu/publications/track-indicator-predictor-high-school-graduation>

proficient readers.<sup>84</sup> If students are not proficient readers when they begin fourth grade, as much as half of the curriculum will be incomprehensible.

### English Language Arts

Early warning indicators for students in English language arts start with screening for reading difficulties beginning in kindergarten. Students in Maryland are required to be screened for reading difficulties beginning in kindergarten and through grade 3. Students at Risk for Reading Difficulties with the Ready to Read Act requires local school systems screen students in foundational reading skills through grade 3. Students who are determined to be at risk for reading difficulties must be provided evidence-based, supplemental reading instruction during the school day to address the student's identified areas of need. Local school systems may revise supplemental instruction based upon progress monitoring and the student's placement in an appropriate multi-tiered system of support, and the local school system shall set an individualized review schedule of the supplemental reading instruction for each student at intervals of not more than 30 days for progress monitoring. The school system may determine that the supplemental instruction plan is completed when the student has achieved grade-level reading standards based upon age-appropriate re-screening.

At the end of grade 3, districts should begin to use the Maryland Comprehensive Assessment Program (MCAP) test score as an early warning sign for students who may not be on-track for college and career readiness. These scores can be used as a "first look" to determine which students may need further assessment and supplemental instruction. A diagnostic assessment should be given to any student determined "at-risk" on MCAP testing, followed by targeted acceleration. Students who have specific instructional areas of risk should be placed into a multi-tiered system of support that addresses specific areas of need. Currently one of the most promising means of intervention for students who are not on track is the use of well-structured supplemental instructional programs. *The Blueprint* mandates that specific transitional education services be provided to struggling learners at the school level and significant per pupil funding support this program. Transitional supplemental instruction includes one-on-one and small-group tutoring of not more than four students with a certified teacher, a teaching assistant, or any other trained professional; cross-age peer tutoring; and screening, identifying, addressing, and targeting specific areas of need.

### Mathematics

Early Warning Indicators for students in grades K-8 mathematics include unsatisfactory grades in the grade-level mathematics class and a score of 1 or 2 on the grade-level MCAP Mathematics assessment. A student's ability to learn grade-level mathematics is dependent on their level of proficiency with the skills and understandings from previous mathematical content. Future success in mathematics is dependent on the appropriate intervention taking place at the first sign of struggle. Failure to provide additional support when a student displays one of the "Early Warning Indicators" is likely to result in challenges in all subsequent mathematics coursework. Currently, there are no consistent practices across the state to address this issue. Local school systems should be required to provide Transitional Supplemental Instruction to students who display Early Warning Indicators.

Students who have been screened or are struggling at the end of grade 5, should be reevaluated for specific areas of need. If the intervention does not meet the student's diagnosed area of weakness, the intervention will be ineffective. Once the student has been screened and diagnosed, a grade-appropriate and evidence-based program should be implemented. If a student is demonstrating weakness in foundational skills, an intervention program must be provided that focuses on an explicit, structured approach for acceleration of learning. If the student is demonstrating weaknesses in comprehension, an evidence-based reading program

---

<sup>84</sup> Annie B. Casey Foundation (2010). Early Warning! Why Reading by the End of Third Grade Matter. Retrieved: [https://assets.aecf.org/m/resourcedoc/AECF-Early\\_Warning\\_Full\\_Report-2010.pdf](https://assets.aecf.org/m/resourcedoc/AECF-Early_Warning_Full_Report-2010.pdf)

designed for middle and high school students should be implemented. If students demonstrate weaknesses in both areas, both supplementary instructional approaches should be provided in a multi-tiered system of approach.

The incorporation of early warning indicators from the KRA, through mathematics and English/language arts performance in elementary and middle school will provide quick and actionable information of which students are on track to be CCR by the end of 10th grade without any major support or adjustments and who need additional support. For those students who are not meeting these on-track indicators, focusing on actionable conversations with students as well as identifying systemic trends allows schools to intervene and get students on track.

## EARLY WARNING INDICATORS FOR HIGH SCHOOL

Research has shown that while a student is in high school, the most predictive indicators of high school and college success are school attendance, course grades, and credit attainment. Chicago Public Schools has had the same ninth grade on-track indicator – which looks at only course grades and credit attainment – in place for the past 20 years. Chicago students on-track in 9th grade graduated high school in four years at a rate of 81%; only 22% of students off-track in 9th grade were able to graduate high school in four years. This impressive predictability was not matched with any test score or other standardized measure.<sup>85</sup>

These early warning indicators provide quick and actionable information of which students are on track to graduate without any major supports or adjustments. For those students who are not meeting these on-track indicators, focusing on actionable conversations with students as well as identifying systemic trends allows schools to intervene and get students back on track. Another major predictor of high school success is a student's school attendance rate. Students who missed more than 10% of their 9th grade year were less likely to graduate on time. This indicator can also be looked at over shorter intervals such as monthly, quarterly, or semester attendance for more real time information. Poor attendance for a student may be an indicator of competing responsibilities or priorities outside of school or a general disengagement from school. If a student has poor attendance because of any of these reasons, the issues may be helped through systemic culture changes, individual check-ins with the student, or sustained individual attention and appropriate social and community supports; however, if a school does not value and prioritize these indicators, the staff may overlook the opportunities to assist the student.<sup>86</sup>

Another commonly used early warning indicator is a student's behavior as defined by office discipline referrals, suspensions, detentions, or classroom behavior grades or marks. The use of behavior data as an early warning indicator has had mixed results due to low predictability of high school graduation as well as inherent difficulties in the data collection and analysis of behavior related activities. Behavioral data is often defined and collected differently in one school compared to another, both in official policy as well as on the ground practical implementation of that policy. Disciplinary actions are also applied disproportionately across different race and ethnic groups as well as genders. These issues complicate the use of behavior data in any systemic manner.<sup>87</sup>

*The Blueprint* details that Maryland must implement a ninth-grade tracker system that mirrors Chicago Public School's ninth grade on-track indicator before the start of the 2022-2023 school year. This tracker is supported by Research conducted by the US Department of Education (2016) regarding early warning signs

---

<sup>85</sup> The On-Track Indicator as a Predictor of High School Graduation. Elaine M. Allensworth. Consortium on Chicago School Research at the University of Chicago. 2005. <https://consortium.uchicago.edu/sites/default/files/2018-10/p78.pdf>

<sup>86</sup> Evidence Based Resources for Keeping Students on Track to Graduation. The George Washington University Center for Equity & Excellence in Education. January 2012. [https://www.lacoe.edu/portals/0/schoolimprovement/1\\_graduation\\_evidence\\_based\\_resources.pdf](https://www.lacoe.edu/portals/0/schoolimprovement/1_graduation_evidence_based_resources.pdf)

<sup>87</sup> Allensworth, E.M., Nagaoka, J., & Johnson, D.W. (2018). High school graduation and college readiness indicator systems: What we know, what we need to know. Chicago, IL: University of Chicago Consortium on School Research

for high school graduation<sup>88</sup>. The tracker required by *The Blueprint* must measure each student's progress toward graduating on time including credit accumulation. The outcomes of the tracker must be reported to the MSDE. The MSDE will report results to the AIB and the Maryland Longitudinal Data System Center. Currently the Maryland High School Report Card includes two metrics associated with “Readiness for Post Secondary Success.” One of the metrics is the on-track in 9th grade measure. This measure is the percentage of 9th grade students earning at least four credits in any of the following:

- English language arts
- Mathematics
- Science
- Social studies
- World language

While Maryland schools are required to collect this information, there are no other specific required actions when it is discovered that a student is not “on-track”. The measure is also not currently used to identify and support students, which is partly due to the original intent to be aggregated to the school level and used for school accountability. Although the measure was constructed with the best available data at the time, it does not include key research-backed components such as course failure (beyond earning credit) and attendance. A comprehensive early warning system would build on data infrastructure and buy-in already present for the on-track in 9th grade measure and also include additional data points and a process for using the measure for identifying and supporting individual students.

Currently, the MSDE is investigating best practices for implementing early warning indicator systems and will expand the definition of “on-track” to include additional metrics such as attendance to identify required actions to support students. This guidance will be shared with LEAs to ensure that all students have access to a system that supports progress toward CCR.

## SPECIAL EDUCATION

For students with disabilities served through an Individualized Education Plan Program (IEP) or Section 504 Plan, early warning indicators that may impact a student's progress toward CCR should be discussed at least annually as part of the annual IEP or Section 504 Plan Team meeting. Early warning indicators may include:

- Inconsistent/Poor attendance
- Behavior that impacts classroom engagement and learning
- Poor/Limited academic performance
- Poor/limited performance on Formal and informal assessments
- Lack of healthy social and emotional functioning
- Lack of progress in IEP or Section 504 goals and objectives, or the student progressing at a rate which is less than anticipated leading to an increasing gap between performance and grade-level expectations

If IEP or Section 504 Plan progress monitoring (including monitoring of early warning indicators) demonstrates that a student is not on track to meet their goals, the IEP or Section 504 Plan team should convene an IEP or Section 504 Plan meeting to review the IEP or Section 504 Plan and consider whether the student needs new, additional or different accommodations, modifications, goals/objectives, specially

---

<sup>88</sup> Issue Brief: Early Warning Systems (2016). <https://www2.ed.gov/rschstat/eval/high-school/early-warning-systems-brief.pdf>

designed instruction, or related services in order to achieve meaningful progress toward college and career readiness.

## ENGLISH LEARNERS (ELS)

School systems should understand that ELs who are still developing English proficiency may appear as "not on target" for CCR based on conventional data. Crucial data points that should be examined to determine CCR for ELs are WIDA ACCESS scores and the growth-to-target path. Growth-to-target path is a strong indicator that the student is adequately developing English language proficiency to be successful in an academic setting. To avoid mis- or over- identification of ELs for additional instructional support that may not be linguistically appropriate, educators and school systems should consider the factors below and when making decisions on CCR.

- EL status (active, reclassified, or refused)
- Native language literacy
- Interrupted schooling
- Trauma and/or social emotional needs
- Age
- Time in US schools
- General education experience

## TITLE I, PART A

To determine if additional instructional and social emotional supports are necessary for students in Schoolwide and Targeted Assistance Title I schools, educators should be familiar with the following factors:

- Use of a needs assessment and multiple criteria processes to determine CCR and to identify those students who have the greatest need
- The age, maturity, grade level, abilities, interests, growth and health of students as a driver for the selection of the schoolwide reform strategies
- Support to address the symptoms resulting from trauma or social emotional needs that can directly impact a student's ability to learn.
- Selection of instructional materials and strategies that are based upon evidence with proven efficacy in coordination with the local curriculum and instruction and research departments/offices

## Section 7: Coordination and Engagement

College and Career Readiness decisions affect nearly all students, educators, and employers in Maryland at each of the primary, secondary, and higher education levels and beyond. The MSDE recognizes the need to make sure that the CCR implementation meets the needs of all stakeholders through sustained meaningful engagement and partnerships.

The MSDE kicked off initial engagement around College and Career Readiness with local Superintendents, The Public School Superintendents' Association of Maryland, and local school district staff. The MSDE shared the current plans and implementation status. The department also engaged in several problems of practice, including implications for higher education; career opportunities for students completing a Post-CCR Pathway; pathway completion requirements (number of courses, etc.), and how and when students should be allowed to switch between pathways if they so choose.

One important piece of early feedback that was received from local superintendents was that they believed that achieving the CCR standard should not be considered a barrier to entry for students otherwise ready for and interested in enrolling in individual advanced courses or career and technical education programs. MSDE agrees with this sentiment and will ensure this messaging is front and center in all communications going forward.

The MSDE is establishing advisory groups dedicated to CCR assessments and other related topics that will include relevant stakeholders from a variety of organizations. For example, in analyzing the results of the two studies commissioned on what the CCR standard should be and developing a proposed standard for consideration by the State Board of Education and the AIB, the MSDE will continue to collaborate with representatives from local school systems, students, families, teachers, principals, the newly established CTE committee, the Workforce Development Board, Division of Rehabilitation Services, Developmental Disabilities Administration, Behavioral Health Administration, the Department of Labor, and others.

### COLLABORATION WITH HIGHER EDUCATION IN MARYLAND

Another crucial task to implement the CCR system successfully, especially the Post-CCR Pathways, is to coordinate with the higher education community to align visions of how students should be prepared for college, and how institutions of higher education will continue to ensure student success. Each of the Post-CCR Pathways enables students to earn a credential that should open meaningful doors after high school graduation. These could include the ability to waive remedial or other entry level college courses and to enter into an advanced honors program, or to enter into a certification program for a high-demand industry with a substantial portion of the coursework already completed and recognized. But to make the pathways truly meaningful for students, both the PreK-12 and higher education communities must agree on the impact of the credentials that students earn and what they represent. The MSDE collaborates with representatives from the Maryland Higher Education Commission, The University System of Maryland, the Maryland Association of Community Colleges, and other community members. The MSDE is committed to developing the structures necessary to allow all Maryland students to succeed during and beyond their public-school careers, including exploring a revitalization of the P-20 Leadership Council of Maryland.

### COLLABORATION TO INFORM STRATEGIC PLANNING

College and career readiness does not start in 9<sup>th</sup> grade, nor end at 12<sup>th</sup> grade. As described elsewhere in this report, for example, MSDE is committed to high quality early warning systems and meaningful Post-CCR Pathways. To enable all student to achieve CCR in 10<sup>th</sup> grade, *The Blueprint* rightfully envisions restructuring of our entire education and early childhood system. Maryland must ensure that students can read by third grade, that families are supported and welcomed into the school, that all students are given

access to rigorous grade-level (or above) content that challenges and engages them, that some student groups are not disproportionately pushed out of school via inappropriate discipline policies or practices, and that educators are supported and respected throughout.

To that end, as the State Board of Education and MSDE are developing a strategic plan for public schools in Maryland, consultation, engagement, and stakeholder input will all continue to be front and center. The strategic plan will guide the implementation of *The Blueprint for Maryland's Future*. Everyone is encouraged to complete the Maryland Public Schools Strategic Planning Survey by going to [MarylandPublicSchools.org/Survey](https://MarylandPublicSchools.org/Survey)

# Proposed CCR Timeline Revision

MSDE proposes revising the implementation dates stated in statute to allow for sufficient time for LEAs to design and implement any new courses, building understanding and enthusiasm about vision, and alignment between Post-CCR and Support Pathways.

**(Education § 7-205.1)**

Current Text	Proposed Revised Text
(e) (1) (i) Each county board, in collaboration with the community colleges, shall develop and implement by the <b>2022-2023</b> school year a program of study for students who have not met the CCR standard by the end of 10th grade.	(e) (1) (i) Each county board, in collaboration with the community colleges, shall develop and implement by the <b>2024-2025</b> school year a program of study for students who have not met the CCR standard by the end of 10th grade.
(g)(1) Beginning in the <b>2023-2024</b> school year, each county board shall provide all students who meet the CCR standard required under subsection (c) of this section with access to the following post college and career readiness (Post-CCR) pathways, at no cost to the student or the student's parents, including the cost of any fees	(g)(1) Beginning in the <b>2024-2025</b> school year, each county board shall provide all students who meet the CCR standard required under subsection (c) of this section with access to the following post college and career readiness (Post-CCR) pathways, at no cost to the student or the student's parents, including the cost of any fees

This revised timeline allows would allow for sufficient time for LEAs to design and implement any new courses, building understanding and enthusiasm about vision, and alignment between Post-CCR and Support Pathways. The revision would enable MSDE and local school districts to have two years of planning, as visualized in the timeline below.

**Figure 22**



# Report Update Status

---

This will be a living document that continues to evolve as MSDE and partners continue to engage in meaningful conversations, complete rigorous research and evaluation, and implement policy around preparing Maryland students to become College and Career Ready.

This first and current version was published in February 2022.