

## Methodology for Achieve Reports: The College and Career Readiness of U.S. High School Graduates

March 14, 2016

To create the 2016 reports, Achieve collected publicly available data from states' report cards, high school feedback reports, and accountability reports throughout summer and fall 2015. Achieve reviewed postsecondary and P–20 reports and reports commissioned by state legislatures and other entities in the state for relevant data. Achieve also drew on publicly available data from national organizations and agencies, including the National Center for Education Statistics (NCES), College Board, ACT, and The Education Trust.

*Quality assurance:* As part of data quality assurance and validation, Achieve completed a secondary check of the data. Additionally, in November 2015, Achieve sent each state education agency the publicly available data collected through the review and provided the state an opportunity to review the information to ensure that Achieve was reporting the most accurate, up-to-date information about the state and to clarify or correct any misrepresentations.

*Definitions:* States define some indicators differently, making comparability a challenge. Some indicators are more standardized than others, but variation does exist. In these cases, individual state profiles contain a discussion of definition and denominator concerns.

*Denominators:* States define denominators differently. Some states report progress of a specific cohort, and others report on graduates, test takers, single-year enrollees, etc., which leads to unlike comparisons when looking across states. States sometimes include different time frames and other limitations in their denominators, complicating the landscape for comparability across states. In these cases, individual state profiles contain a discussion of definition and denominator concerns.

*Subgroups:* For each indicator, we collected available subgroup data. For most indicators, states did not consistently report subgroup data. To ease reporting and display of the data, we standardized subgroups into 11 classifications, including the seven federal reporting race/ethnicity categories: All Students, American Indian/Alaska Native, Asian, Black, Hispanic, Native Hawaiian/Other Pacific Islander, White, Two or More Races, Low Income, Students with Disabilities, and Limited English Proficient.

These subgroups remain standardized across states except in a handful of instances when greater specificity was required, i.e., breaking out Pacific Islander and Native Hawaiian separately. For joint categories, e.g., American Indian/Alaska Native, a state may publicly report only one of the two subgroups; however, for our reporting, these data would still be reported under the joint subgroup category.

We recognize that states define and report subgroups differently. In an effort to provide standardization across reports, state-reported subgroups and reporting groups were aggregated as follows:

- **American Indian/Alaska Native:** American Indian, American Indian/Alaska Native, Native American.
- **Asian:** Asian, Asian American, Asian/Pacific Islander.
- **Black:** African American, African American/Black, Black/African American, Black.
- **Hispanic:** Hispanic, Hispanic/Latino.
- **Native Hawaiian/Other Pacific Islander:** Pacific Islander.
- **White:** Caucasian, White, White (Not Hispanic).

- **Two or More Races:** More Than One; Multirace; Multiethnic; Multirace, Non-Hispanic; Multiracial; Multiple Races; Multiracial; Two or More.
- **Limited English Proficient:** Bilingual or ESL, ELL, ELL in Last Year, ELL/LEP, English Language Learners, English Language Learners (LEP), English Learners, LEP, Limited English, Limited English Proficiency, Limited English Proficient.
- **Students with Disabilities:** Disability with IEP, Disabled (SPED), IEP, IEP/SPED Students, Special Education, SPED.
- **Low Income:** Economically Disadvantaged, Eligible for Lunch, Eligible for Free Lunch, Eligible for Reduced Lunch, FARMS, Free and Reduced Lunch, Free Meals, Free or Reduced Lunch, Free/Reduced-Price Lunch, Free/Reduced-Price Meals, Low SES, Lunch Eligible, NSLP Eligible, Paid Meals, Poverty, Reduced Price Meals, Subsidized Meals.
  - o For the National Assessment of Educational Progress (NAEP) data, we maintained the reporting categories of Eligible for National School Lunch Program and Ineligible for National School Lunch Program.

#### *Data Collection*

- *State-level data:* To be included in this report, states had to publicly report data at the state level. In some states, data are reported for these indicators but only at the school or district level.
- *Trend data:* For each indicator, we collected up to four years of available trend data. Due to the lack of available trend data for most indicators, trend data are presented only for a subset of the indicators.
- *Timestamp of data:* For a subset of indicators (economic indicators, graduation rate, NAEP), we selected consistent reporting years for comparison's sake. For all other indicators, the years for which data are reported vary by indicator and state. The data included may reflect data the state reports annually — or they may be a one-time snapshot report.
- *Rounding rules:* Data included in the reports are presented as a whole number; we rounded up from 5 — e.g., 74.5 is rounded up to 75, and 74.4 is rounded down to 74.
- *Data calculations:* In some cases, states publicly reported numbers for data related to student outcomes. Where we could calculate a percentage for inclusion in the report, we did so.
- *Source links:* URL/links to sources where the data are publicly reported by the state are included for each indicator in the “Data Sources” section of each state’s profile.
- *Data collection timeline:* Data was collected from publicly available sources through winter 2015. Data that states reported after winter 2015 may not be included in this report.

#### **Economic Indicators**

The economic indicators data was supplied by Burning Glass Technology (BGT). The data presented was compiled by BGT for each state; this data is not publicly available and is not state-reported. Additional detail on where each data point comes from can be found below.

- *Percentage of adults with education level:* This indicator demonstrates the highest level of educational attainment of adults ages 25 and older. Data come from the U.S. Census Bureau’s 2013 American Community Survey data.
- *Percentage of jobs requiring education level, average advertised salary, STEM and non-STEM job market composition, and education requirements for STEM and non-STEM jobs:* All of these indicators are drawn from analyses of Burning Glass Technologies’ (BGT) database of online job postings from close to 40,000 sources. The specific data reported here are based on BGT job posting data from July 2014 to June 2015.

- *Definition of STEM jobs:* The analysis takes a job seeker- and student-centric approach to defining STEM occupations and defines STEM jobs as those that have substantial mathematics and science requirements included within either the standard course of training or the specific qualifications requested in job postings. As a result, “STEM jobs” includes the following occupational areas: science, information technology, engineering, mathematics, and health care.

This approach contrasts with traditional methodologies, which tend to focus only on jobs that are primarily engaged in scientific, mathematical, or technological activity. Examples of jobs that are included in this analysis that are typically excluded from STEM jobs definitions: clinical health care roles that require that job seekers undertake substantial coursework in the biological sciences and a range of “analyst” jobs (such as logistics analysts and business intelligence analysts) that call for significant mathematics training.

### College- and Career-Ready (CCR) Assessment Score

This indicator identifies the percentage of students who score at the CCR level on statewide high school assessments anchored to CCR standards. These assessments include a performance level/cut score that provides high school students a clear signal regarding their readiness for first-year mathematics and English courses at postsecondary institutions and is used by two- and four-year colleges and universities for placement into first-year, credit-bearing courses.

- **Minimum criteria and business rules:**
  - The percentage of students meeting benchmarks must be reported; average or composite results across subjects are not included.
  - Participation rates are included where available.
  - Subgroup data are reported where available.
  - Definitions and denominators (e.g., test takers, graduates, seniors) vary by state and are reported in states’ individual profiles.
  - In cases where data were reported by both the state and ACT or College Board, results differ due to differences in denominators. In these cases, Achieve used the state’s most recent year of reported data.
  - In cases where the state does not report the percentage of students meeting ACT or SAT benchmarks, we report 2014-15 data sourced from ACT and/or College Board, as long as a minimum threshold for participation rate (20 percent) is met.
  - If a state administered the ACT or SAT to all students in a cohort or to all graduates, results are not reported for the other college admissions assessment.
- **ACT performance:** Percentage of students meeting ACT’s College Readiness Benchmarks in individual subject areas — English, mathematics, reading, science — and in all four subject areas combined.
  - If the state publicly reported these data, that reporting was included in the state profile. If the state did not publicly report these data and the state met the participation threshold for inclusion (20 percent), then ACT’s reporting of student results was included in the state profile. It should be noted that ACT’s participation rate is based upon projections of graduates made by the Western Interstate Commission for Higher Education (WICHE) rather than actual graduates.
  - If the state reported performance against a set of its own benchmarks (and the benchmarks are lower than the benchmarks set by ACT), we reported the state’s data but noted in the profile that they differed from ACT’s benchmarks.
- **SAT performance:** Percentage of students meeting SAT’s College Readiness Benchmark (which includes critical reading, math and writing).

- If the state publicly reported these data, that reporting was included in the state profile. If the state did not publicly report these data and the state met the participation threshold for inclusion (20 percent), then College Board’s reporting of student results was included in the state profile. It should be noted that SAT’s participation rate is based upon projections of graduates made by the Western Interstate Commission for Higher Education (WICHE) rather than actual graduates.
- If the state reported performance against a set of its own benchmarks (and the benchmarks are lower than the benchmarks set by College Board), we reported the state’s data but noted in the profile that they differed from College Board’s benchmarks.
- **Performance on a state-developed high school assessment:** Percentage of the high school graduation cohort scoring proficient on an Algebra II/Integrated Math III, English Language Arts/Literacy 11/English III, or 11th grade comprehensive assessment in mathematics and/or English language arts/literacy.
  - Assessments that met this criteria included Smarter Balanced Assessment Consortium English language arts and mathematics assessments for high school; Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts 11/English III and Algebra II/Integrated Math III assessments; and the New York Regents exams in Comprehensive English and Algebra II.
    - i. For Smarter Balanced, proficiency is defined as scoring a 3 or 4 on the assessments. A score of 3 signifies conditional readiness for postsecondary, and a score of 4 signifies readiness for postsecondary. See postsecondary policy here: <http://www.smarterbalanced.org/achievement-levels/>.
    - ii. For PARCC, proficiency is defined as scoring a 4 or 5 on the assessments. A score of 4 signifies on track to readiness for postsecondary, and a score of 5 signifies readiness for postsecondary. See postsecondary policy here: <http://www.parcconline.org/assessments/test-design/college-career-ready>. Where N sizes were available, we combined the results of Algebra II/Integrated Math III assessments to capture as many students as possible. In cases where only percentages were reported, we included Algebra II results since more students took the Algebra II assessment than the Integrated III assessment and noted that Integrated III results were not included.
    - iii. For New York’s Regents exams, we reported the percentage of students that scored an 85 or above on the assessment. While these two assessments (Comprehensive English and Algebra II) are used by the City University of New York (CUNY) and State University of New York (SUNY) systems for placement, there is no statewide placement policy, and institutions can set their own cut scores for placement. The CUNY system set the cut score at 75. The New York State Department of Education reports the percentage of students scoring 65 and above and 85 and above. We selected to publicly report the percentage of students scoring at and above 85, recognizing that students are being placed into postsecondary with a lower score.
  - When available, the participation rate on these assessments was included; however, because PARCC and Regents are end-of-course assessments, there is no clear cohort of students who should have taken the test other than those who completed the course. Therefore, the participation rate for PARCC and Regents is not applicable (N/A).

*Cross-state table methodology:* Since states report ACT and SAT results differently and have differing years of most recent data, to further comparability of data in the cross-state profile, we used 2014-15 ACT- and College Board-reported results for each state that met the participation threshold (20 percent)

even if the state was reporting the data independently. Data may differ for a state between what's presented in the individual state profile versus the cross-state profile.

### 9th grade Adjusted Cohort's Estimated College- and Career-Ready Assessment Score

This indicator reports the estimated percentage of the 9th grade cohort – not just test takers in 11th and/or 12th grade – that met the CCR benchmarks.

- **Minimum criteria and business rules:**
  - o States that administered the ACT, SAT, PARCC, or Smarter Balanced exam had to administer the assessment to all students in a cohort *and* report the number of students meeting CCR benchmarks or taking the test — rather than rely on third-party reporting.
  - o If a state supplied the number of students taking the test, that number was multiplied by the percentage of students meeting CCR benchmarks for each subject area, as applicable, to determine the number of students meeting CCR benchmarks. This number was then divided by the number of students in the 9th grade cohort, as reported by USED, to arrive at the estimated percentage of the 9th grade cohort meeting CCR benchmarks.
  - o If a state supplied the number of students earning a CCR benchmark, for applicable subjects, that number was divided by the number of students in the 9th grade cohort, as reported by USED, to arrive at the estimated percentage of the 9th grade cohort meeting CCR benchmarks.
  - o For states that administered the SAT or ACT, the 11<sup>th</sup> grade test taker results from 2012-13 were used as these are the same students as in the 2013-14 USED cohort data.
  - o For states that administered Smarter Balanced and PARCC English 11/III, the n size of 2014-15 test takers was divided by the 2013-14 cohort data from USED. Cohort data for 2014-15 is not yet available from USED.

*NOTE: This indicator and data are only found in the cross-state report.*

### Students On Track To Graduate Based on Credit Accumulation

This indicator identifies the percentage of students in the 9th grade who are on track to graduate based on the number of credits earned by the end of the 9th grade year.

- All states that reported this indicator had slightly different definitions of what constituted “on track” to graduate. Therefore, definitions have been included for this indicator, and this indicator is not comparable across states.
- **Minimum criteria and business rules:**
  - o State must report the data.
  - o The most recent year of available data is included; this varies by state.
  - o Subgroup data are reported where available.
  - o Definitions and denominators vary by state. We report differences in states’ definitions and denominators.

### Adjusted Cohort Graduation Rates (ACGR)

This indicator identifies the percentage of 9th graders who graduate from high school in four years or less with a regular high school diploma divided by the number of students who entered high school four years earlier (adjusting for transfers in and out, émigrés, and deceased students). We also report five-year graduation rates. All states are required to report four-year ACGR to the U.S. Department of Education (USED), but five-year ACGR is not required nor consistently available across states.

- **Minimum criteria and business rules:**

- o Four-year and five-year graduation rate for entering 9th graders in 2009–10 (four-year graduates in 2013, five-year graduates in 2014).
- o Four-year and five-year graduation rate for entering 9th graders in 2010–11 (four-year graduates in 2014, five-year graduates in 2015).
- o Subgroup data are reported for both four- and five-year rates where available.
- o Priority/preference is that the state reports its graduation data. In a few cases, a state did not report graduation rate data but requested the data be sourced from the data the state reports to USED that is publicly reported by USED.

### College- and Career-Ready Coursework Completion

Achieve considers states' mathematics and ELA/literacy high school graduation requirements to be at the CCR level if students are expected to complete a course of study aligned with state-adopted CCR standards, which typically includes at least three years of mathematics and four years of rigorous, grade-level English. For additional information on diploma classifications and CCR criteria, click [here](#).

- **Minimum criteria and business rules:**

- o State must report the data.
- o Data are reported for 2012–13 and 2013–14.
- o For this indicator, the denominator should include all students in the graduating cohort (using a four-year ACGR). We report differences in states' denominators (e.g., entering 9th grade cohort, graduates, seniors).
- o Subgroup data are reported where available.

### 9th Grade Adjusted Cohort's Estimated College- and Career-Ready Coursework Completion

This indicator reports the estimated percentage of the 9th grade cohort, not just graduates or seniors, who completed a CCR course of study. Achieve calculated this indicator by dividing states' reported numbers of CCR course of study completers by state-specific adjusted cohort data supplied by USED for 2013–14.

- **Minimum criteria and business rules:**

- o State must report the data.
- o Data are reported for 2013–14.
- o Percentages were calculated for states that reported numbers of CCR course of study completers.
- o Percentages were calculated by dividing states' reported numbers of CCR course of study completers by state-specific adjusted cohort data supplied by USED in 2013–14.
- o For states that require all students to complete a CCR course of study, the four-year adjusted cohort graduation rate also serves as the percentage of the grade 9 cohort completing a CCR course of study.

*NOTE: This indicator and data are only found in the cross-state report.*

### Earning College Credit while in High School

This indicator identifies the percentage of the high school graduation cohort who earn college credit while still enrolled in high school through scoring a 3+ on an Advanced Placement (AP) exam, scoring a 4+ on an International Baccalaureate (IB) exam, or successfully completing a dual enrollment course or who meet the threshold of a state's defined AP/IB/dual enrollment/career-technical education metaindicator.

#### Percentage of the high school graduation cohort who have earned a 3+ on an AP exam

- **Minimum criteria and business rules:**

- o Performance or success in the courses, not just participation or enrollment, must be reported.
- o State must report the data. We sought to elevate states' ownership and use of their own students' data; College Board issues annual state-level reports report of AP results some data are publicly reported by other entities.
- o Ideally, the denominator includes all students in a high school graduation cohort (using a four-year ACGR). For this indicator, we report differences in states' denominators (e.g., test takers, graduates, seniors, or tests taken).
- o The numerator should reflect the number of students *earning credit* for their CCR performance.
- o The most recent three years of data are included where available.
- o Subgroup data are reported for the most recent year of data where available data.

#### Percentage of the high school graduation cohort who have completed IB/earn college credit

- **Minimum criteria and business rules:**
  - o Performance or success in the courses, not just participation or enrollment, must be reported.
  - o Ideally, the denominator includes all students in a high school graduation cohort (using a four-year ACGR). For this indicator, we report differences in states' denominators (e.g., test takers, graduates, seniors, or tests taken).
  - o The numerator should reflect the number of students *earning credit* for their CCR performance.
  - o State must report the data.
  - o The most recent year of available data is included.
  - o Subgroup data are not included due to lack of availability from states.

#### Percentage of the high school graduation cohort who have successfully completed dual enrollment courses for college credit

- **Minimum criteria and business rules:**
  - o Performance or success in the courses, not just participation or enrollment, must be reported.
  - o Ideally, the denominator includes all students in a high school graduation cohort (using a four-year ACGR). For this indicator, we report differences in states' denominators (e.g., test takers, graduates, seniors, or tests taken).
  - o The numerator should reflect the number of students *earning credit* for their CCR performance.
  - o State must report the data.
  - o The most recent year of available data is included.
  - o Subgroup data are not included due to lack of availability from states.

#### Percentage of the high school graduation cohort who meet the threshold of the AP/IB/dual enrollment/career-technical education metaindicator

- **Minimum criteria and business rules:**
  - o Some states combine measures of AP, IB, or career and technical education coursework with measures like AP, IB, and dual enrollment — and these measures are not reported independently. While not preferable to disaggregated data, in an effort to be as comprehensive as possible, we have included states' reporting of "metaindicators."

- Performance or success, not just participation or enrollment, must be reported.
- Ideally, the denominator includes all students in a high school graduation cohort (using a four-year ACGR). For this indicator, we report differences in states' denominators (e.g., test takers, graduates, seniors, or tests taken).
- The most recent year of available data is included.
- Subgroup data are not included due to lack of availability from states.

### Preparedness for the Military

- Data are included for four reporting groups: All Students, Black, Hispanic, and White.
- Data reflect students who seek to enter the military but are *not eligible* to enter or are not prepared for higher-level education, training, and advancement opportunities offered by the U.S. Armed Forces based on performance on the Armed Services Vocational Aptitude Battery (ASVAB).
- The source of the data is a 2010 Education Trust report available at <https://edtrust.org/resource/shut-out-of-the-military-todays-high-school-education-doesnt-mean-youre-ready-for-todays-army/>. The Education Trust provides their methodology for this report as follows: "In 2010, the U.S. Army provided The Education Trust with the results of all those individuals who took the ASVAB test with the intent of enlisting in a component of the Army. The study sample in this brief are 348,203 individuals, ages 17–20, with a high school diploma who took the ASVAB between 2004 and 2009. It is a subset of the 1,413,224 individuals, including those with a wider age range and varying educational levels, who took the ASVAB for enlistment in the Army during that period and of the 683,790 of those individuals, again with a wider age range, whose highest educational credential was a high school diploma. Of those surveyed, 34 percent were 19 years of age at the time, 29 percent were 18, 26 percent were 20, and 11 percent were 17."

*NOTE: This indicator is available in individual state profiles only – not the cross-state report.*

### Postsecondary Enrollment

This indicator identifies the percentage of the *state's high school graduates* who enroll in a postsecondary institution after high school graduation.

- **Minimum criteria:**
  - The denominator is the number of students who graduated from the state's high schools during a particular school year.
  - The numerator is the number of these students who enrolled in postsecondary institutions during a particular time frame.
  - If a state's postsecondary system reports total college enrollees but does not disaggregate data by high school graduates from the state's K–12 system, then it is not reported.
- **Business rules:**
  - Optimally, the denominator includes all students in a high school graduation cohort. Definitions and denominators vary by state. We report differences in states' definitions and denominators.
  - We tried to paint as comprehensive as picture as possible for each state. Where available, disaggregated rates of postsecondary enrollment have been collected for a state's two-year and four-year systems, in-state and out-of-state institutions, and public and private institutions.
  - The most recent year of available data is included; this varies by state.

- o Subgroup data are not reported.

### Postsecondary Remediation

This indicator identifies the percentage of high school graduates who, upon entrance to a postsecondary institution, are placed into or enrolled in a remedial course in English, mathematics, and “any remediation.”

- **Minimum criteria:**
  - o The numerator includes the number of students enrolled in remedial coursework during their *first year of postsecondary education*, reported by subject area (e.g., percentage in remedial reading, percentage in mathematics, and percentage in writing), or if unavailable, it also is acceptable to define remedial course-taking as “enrollment in remedial reading, writing and/or mathematics” (e.g., not disaggregated by subject).
  - o Optimally, the denominator is the number of students who graduated from high school in the state and enrolled in postsecondary. In contrast, some states report any undergraduates requiring remediation (which includes those who have not graduated from high school in the state). In an effort to be as comprehensive as possible, we have included both approaches.
- **Business rules:**
  - o Definitions and denominators vary by state. Some states report high school graduates’ enrollment in four-year and two-year institutions; some report only four-year or two-year enrollment. Therefore, the reports include states’ definitions and denominators.
  - o Where possible, data are disaggregated by two- and four-year institutions by subject area (e.g., two-year mathematics remediation, four-year mathematics remediation).
  - o If the state reported raw numbers (e.g., of the 1,000 enrollees, 250 required mathematics remediation), we reported these data as a percentage (25 percent).
  - o The most recent year of available data is included; this varies by state.
  - o Subgroup data are not reported due to lack of availability from states.

### Postsecondary Persistence

This indicator identifies the percentage of the *state’s high school graduates* who enrolled in a postsecondary institution and either (a) complete at least one year of postsecondary education (determined by course credits earned) in a designated amount of time or (b) return to postsecondary education for a consecutive year (or term).

- **Minimum criteria:**
  - o State-reported data must reflect the students graduating from the state’s K–12 system.
  - o If a state’s postsecondary system reports total college enrollees but does not disaggregate data by high school graduates from the state’s K–12 system, then it is not reported.
- **Business rules:**
  - o Definitions and denominators vary by state. Some states report persistence of high school graduates who enroll in four-year and two-year institutions; some report persistence of only four-year (or two-year) enrollees. We provided a comprehensive picture of available data for each state.
  - o Where possible, data are disaggregated by two-year and four-year systems, in-state and out-of-state institutions, and public and private institutions.
  - o Definitions and denominators vary by state. We report differences in states’ definitions and denominators.

- o If the state reported raw numbers (e.g., of the 1,000 enrollees, 250 persisted), we reported these data as a percentage (25 percent).
- o The most recent year of available data is included; this varies by state.
- o Subgroup data are not reported due to lack of availability from states.

### Academic Performance of Elementary and Middle School Students

We reported the following NAEP data for states:

- Grades 4 and 8 average scale scores for 2005 and 2015 in reading and mathematics for all students and the change in average scale score over this time period for all students.
  - o Change in gaps for three sets of subgroups between 2005 and 2015: Black-White, Hispanic-White, and National School Lunch Program Eligible-Ineligible Students.
- Grades 4 and 8 percentage of students meeting proficient/advanced benchmarks in reading and mathematics for all subgroups in 2015.
- Grade 8 percentage of students meeting proficient/advanced benchmarks in science for all subgroups in 2011. This is the most recent year of science data available from NAEP.
- Achieve used the NAEP school-reported categorization of racial subgroups based on 2011 guidelines when reporting percentage of students meeting proficient/advanced benchmarks.
- Achieve used the NAEP school-reported categorization of racial subgroups based on trend data guidelines when reporting scale scores and changes from 2005 to 2015.
- The source of the data is NAEP Data Explorer available at <http://nces.ed.gov/nationsreportcard/naepdata/>.

*NOTE: This indicator is available in individual state profiles only – not the cross-state report.*