

AP[®] Cohort Data Report

GRADUATING CLASS OF 2016



About the Data

This report represents U.S. public school students only because a central source of enrollment and demographic data for nonpublic schools is not available for all states. References to the total number of high school graduates represent projections supplied in *Knocking at the College Door* (Western Interstate Commission for Higher Education, 2016). Additionally, this report looks at students' entire experience with AP—accounting for exams taken by members of the class of 2016 throughout their time in high school—rather than reporting exam results from a particular school year.

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First AP Exam Administration, 1956

Introduction

Expanding Access

For 60 years, the College Board's AP® Program has been delivering excellence in education to millions of students across the country.

In 1956, during the first AP Exam administration, 1,229 students in 104 schools sat for 2,199 AP Exams. By 2016, those numbers had grown to 2.6 million students in nearly 22,000 schools sitting for 4.7 million exams.

AP currently offers 38 courses in a wide variety of subject areas—including art, computer science and mathematics, world languages and culture, natural and physical sciences, English, government and politics, and more. Students who participate in AP dig deeper into the subjects they love, exploring new ideas with their classmates and teachers, while facing unique challenges and learning skills that will lead to increased readiness for life after high school.

In fall 2016, AP launched its newest course: AP Computer Science Principles (AP CSP). AP CSP was designed to broaden the invitation to computer science, especially to students who are traditionally underrepresented in the computer science field. Over 2,500 schools are offering AP CSP in its first year, making it the largest course launch in AP's history. Expanding access to AP CSP means expanding access to computer science education that will prepare students for the jobs of tomorrow.

Another important component of expanding AP access is ensuring that low-income students are able to take AP Exams. Since 1999, the federal government has provided funding for low-income students to take AP Exams under the Advanced Placement Test Fee Program. The results have been significant. In 1999, 48,000 low-income students used federal funding to help cover the cost of AP Exams; in 2016, more than 500,000 did. Beginning with the May 2017 AP Exams, however, the AP Test Fee Program is ending, and federal funds will be distributed to states through one block grant: Every Student Succeeds Act (ESSA) Title IV, Part A. Suggestions for how states and districts can ensure that low-income students continue to receive federal funding to reduce the costs of their AP Exams can be found on page 19 of this report.

As schools have worked with parents to encourage prepared and willing students to take AP, they've also ensured that AP classes remain challenging, college-level academic environments. In "AP at Scale: Public School Students in Advanced Placement, 1990–2013,"¹ American Enterprise Institute researcher Nat Malkus presents data showing that increasing numbers of students are embracing and succeeding in AP courses. The report points out that while AP participation increased significantly between 2000 and 2009, there was no corresponding drop in the test scores of AP students, demonstrating that the program continued to grow while maintaining its high level of quality. Malkus wrote, "**Expanding at scale without sacrificing rigor is the rarest kind of success in public education, and AP is showing just that.**" He also noted that "AP's dramatic growth has made it an indispensable part of public education, but the real feat has been maintaining quality at scale." Malkus called AP perhaps "the single happiest education story of the century."

1. Malkus, Nat. "AP at Scale." (2016). www.aei.org/wp-content/uploads/2016/01/AP-at-Scale.pdf

Measuring Progress

Taking a closer look at the progress states are making toward expanding access to AP, the College Board reports on the participation and performance of U.S. public school students in each year's graduating class.² The AP Cohort Data Report uses multiple years of AP data to present a full picture of a graduating class's entire experience with the Advanced Placement Program®, tracking exams taken by graduates throughout their time in high school.

The longitudinal approach of the AP Cohort Data Report reveals the longer-term results of state- and district-level initiatives, providing information educators and policymakers can use to:

- Celebrate their successes.
- Understand their distinct challenges.
- Set meaningful, data-driven goals to increase access, opportunity, participation, and performance for all students.

National Highlights for the Class of 2016

- **1.1 million students in the class of 2016 took more than 3.8 million AP Exams** in public high schools nationwide, as educators across the country continue to enable a wider and more diverse population of students to participate in AP.
- **36.2% of the class of 2016 took at least one AP Exam during high school**, and 21.9% of the graduating class scored a 3 or higher on at least one AP Exam.
- In the class of 2016, **AP Exam Fee Reductions were used by 30.1% of total AP Exam takers** and 24.9% of AP Exam takers scoring a 3 or higher on at least one AP Exam. More low-income students are participating and experiencing success in AP than ever before, making the funding of AP Exams under ESSA grant programs an essential part of creating equal access for all students going forward.
- Over the past 10 years, the percentage of all U.S. public high school graduates earning a score of 3 or higher on at least one AP Exam has **grown by 7.6 percentage points**.
- Traditionally underrepresented students—including black/African American, Hispanic/Latino, American Indian/Alaska Native, and Native Hawaiian/Other Pacific Islander students—**need increased access and support to succeed in AP**.

2. Because reliable enrollment and demographic data for nonpublic schools are not available for all states, this national report represents U.S. public school students only.

The Benefits of AP® Courses and AP Exams

In addition to college-level coursework, taking AP Exams is an essential part of the AP experience and helps students to:



Save time and money once they get to college, providing them with opportunities to move directly into upper-level courses by earning college credit, advanced placement, or both.



Stand out in the college admission process by showing that they're committed to success beyond high school and prepared for the challenges of college.



Earn academic scholarships and awards from colleges and universities.



Develop confidence to overcome new academic challenges.

Why do AP Exam scores of 3 or higher matter?

When compared to their peers who did not take an AP Exam while in high school, students who score a 3 or higher on an AP Exam typically:³

- Earn higher grade-point averages (GPAs) in college.
- Perform as well as or better in subsequent college courses in the exam discipline than non-AP students who took the corresponding introductory college course.
- Take more—not less—college coursework in the discipline.
- Are more likely to graduate from college on time in four years.
- Have higher graduation rates.
- More recent research⁴ shows that even students who score 1s and 2s on exams are more likely to graduate from college in four years.

3. For supporting research, see bit.ly/WnOQBn, bit.ly/YWbtTg, and bit.ly/13MGk11.

4. For supporting research, see bit.ly/2dEhUml.

Focus on Access

The AP Program encourages educators to make equitable access a guiding principle for their AP courses and give all willing and academically prepared students the opportunity to participate in AP. In schools across the country, educators are:

- **Eliminating barriers** that restrict access to AP for students from ethnic/racial and socioeconomic groups that have been traditionally underrepresented.
- Making every effort to ensure their AP classes **reflect the diversity of their student population**.
- **Providing all students with access** to academically challenging coursework before they enroll in AP classes.

Complementing the local efforts of educators, the AP Program has recently launched five new courses, diversifying course options and appealing to more students' interests, and developed free resources and other opportunities for teachers, school and district administrators, and state leaders to help greater numbers of students succeed in AP.





New Courses

AP courses give students greater opportunities to explore the academic areas that interest them the most. Since 2014, five new courses have been added to AP:

- **AP Seminar** and **AP Research** are the two courses that constitute **AP Capstone™**—an innovative diploma program that equips students with the independent research, collaborative teamwork, and written and oral communication skills that are increasingly valued by colleges. This program is designed to complement and enhance the in-depth, discipline-specific study experienced in other AP courses.
- **AP Computer Science Principles** was developed to introduce computer science to a broader range of high school students. It teaches students the foundational concepts of computer science and challenges them to explore how computing and technology can impact the world. With a unique focus on creative problem solving and real-world applications, AP Computer Science Principles prepares students for college and career.
- **AP Physics 1: Algebra-Based** and **AP Physics 2: Algebra-Based** are the equivalent of the first and second semesters of an introductory, algebra-based physics college course. Because these courses are intended to be yearlong courses, teachers have time to foster deeper conceptual understanding through student-centered, inquiry-based instruction. Students have time to master foundational physics principles while engaging in science practices.

Resources and Opportunities

FOR TEACHERS

When more teachers are knowledgeable about and prepared to teach AP, schools can offer new AP courses and more sections of existing AP courses to open doors for greater numbers of students to participate in AP.

Free resources on AP Central® include the following. For more information on teacher resources, visit apcentral.collegeboard.com.



Two-Page Course Overviews

These documents provide succinct descriptions of AP courses and exams.

Course and Exam Description

This is the core document for each AP course. It lays out the course content and describes the AP Exam and the AP Program in general.

Course FAQs

These documents provide answers to commonly asked questions about AP courses and exams.

Course Syllabus Development Guides

These documents include the guidelines reviewers use to evaluate syllabi along with three samples of evidence for each requirement. The guides also specify the level of detail required in the syllabus to receive course authorization.

Sample Course Planning and Pacing Guides

Written by AP teachers, these versatile guides demonstrate a variety of ways to plan and pace the AP curriculum across one academic year. Each author presents a host of ideas for activities, resources, and assessments.



Student Performance Q&A

In this resource, the chief reader of the AP Exam compiles feedback from leaders at the AP Reading to describe how students performed on the free-response questions, summarizes typical student errors, and addresses specific concepts and content with which students have struggled the most that year.

Instructional Planning Report

This report shows the performance of a school's students on the multiple-choice and free-response sections and on specific topics within an AP Exam, compared to all students who sat for that exam.



Video Overview Modules

This series of videos provides an in-depth look at the AP course and exam.

Teaching and Assessing Videos

This series of videos features master teachers modeling key instructional strategies for challenging skills, as well as content and resources to help teachers implement these strategies in their classrooms.



Past Free-Response Questions

Teachers can find free-response questions from the most recent exam and exams from previous years to aid their classroom instruction and to get students ready for the AP Exam.

Full-Length Practice Exams

Teachers can access full-length practice exams through their AP Course Audit accounts to give students a real testing experience prior to exam day.



AP Teacher Community

Teachers can connect with other educators in the AP Teacher Community—their online home for discussing teaching strategies, asking questions, and sharing best practices. These online communities support AP coordinators and teachers across all AP courses.

Other opportunities include:

Becoming an AP Reader

Teachers who participate in the AP Reading in June get invaluable insight into the AP Exam scoring process and can exchange ideas through networking with other educators.

Becoming an AP Workshop Consultant

Experienced AP teachers can share their expertise and best practices with other education professionals by becoming AP workshop consultants.

Attending the AP Annual Conference

Teachers can attend the AP Annual Conference with thousands of their peers and choose from hundreds of dynamic sessions in one inspiring professional development event held each summer.



FOR SCHOOL AND DISTRICT LEADERS

School and district leaders have shown dedication to AP by implementing and sustaining school practices and structures that support growing AP programs.

Free resources include:



AP Potential™

AP Potential is designed to help educators increase access to AP and to ensure that no student who has the chance of succeeding in AP is overlooked. AP Potential is a free, web-based tool that allows schools to identify students who are likely to score a 3 or higher on a given AP Exam based on their performance on the PSAT/NMSQT®, PSAT™ 8/9, PSAT™ 10, or SAT®.

AP Potential is rooted in a long line of research⁵ showing moderate to strong correlations between PSAT/NMSQT scores and AP Exam results, and that PSAT/NMSQT scores are stronger predictors of students' AP Exam scores than the more traditional factors such as high school grades and grades in same-discipline coursework.

Educators can use AP Potential to add AP courses to their school's master course offerings and/or to add more sections of AP courses already offered at their schools.



Online Score Reports for Educators

Authorized school administrators and AP coordinators have access to the following reports that help them better understand the growth in AP at their schools.

- AP Instructional Planning Report
- Subject Score Roster
- School Score Roster
- School Scholar Roster
- Scholar Summary Report
- Student Score Report
- Student Data File
- Current Year Score Summary
- Five-Year School Score Summary
- School Summary by Student Demographics
- School Summary with Comparable Groups
- AP Equity and Excellence Report
- College and University Totals

Other opportunities include:

AP Mentoring

School and district administrators can support their AP English Literature and Composition, AP U.S. History, and AP Computer Science Principles teachers by connecting them with expert teachers who will help them enhance their instructional practices.

5. For supporting research on AP Potential, see bit.ly/2f2k7OT, bit.ly/2ezRA3k, and bit.ly/2eFI0s0.

FOR STATE LEADERS

Policymakers at the state level are collaborating with local educators to increase access to AP, especially among traditionally underrepresented students.

Together, they are committing to:

- **Professional Development**
Offer/require professional development opportunities for AP teachers that include College Board workshops or AP Summer Institutes.
- **Funding**
Provide funding for all students to take AP Exams.
- **AP Potential**
Encourage students with AP potential to choose AP by sending personalized letters to students who qualify.
- **Classroom Resources**
Invest in classroom resources, such as AP Insight, that provide digital toolkits of assessments, instructional activities, and professional learning resources.
- **Accountability**
Set a clear, measurable statewide goal for AP to be incorporated into the state report card, establishing indicators for both AP participation and performance.
- **Credit Policy**
Ensure that public colleges and universities develop transparent, data-driven AP Exam policies that recognize student achievement by awarding course equivalent college credit and advanced placement based on qualifying scores, which leads to:
 - ♦ Improved enrollment efficiency for higher education through seamless course articulation and transfer;
 - ♦ Better student outcomes with increased credit portability and degree completion rates;
 - ♦ Reduced duplication or accumulation of excess credit hours; and
 - ♦ Minimized economic burdens for students and families.

National AP Participation and Performance

Over the last 10 years, the national percentage of all U.S. public high school graduates who took an AP Exam during high school has grown steadily, as has the percentage of all U.S. public high school graduates who scored a 3 or higher on at least one AP Exam.

Within the graduating class of 2016:

- **1,136,792** U.S. public high school graduates **took at least one AP Exam**.
- **688,377** of those graduates **scored a 3 or higher** on an AP Exam.

AP Participation and Performance Within the Class of 2016

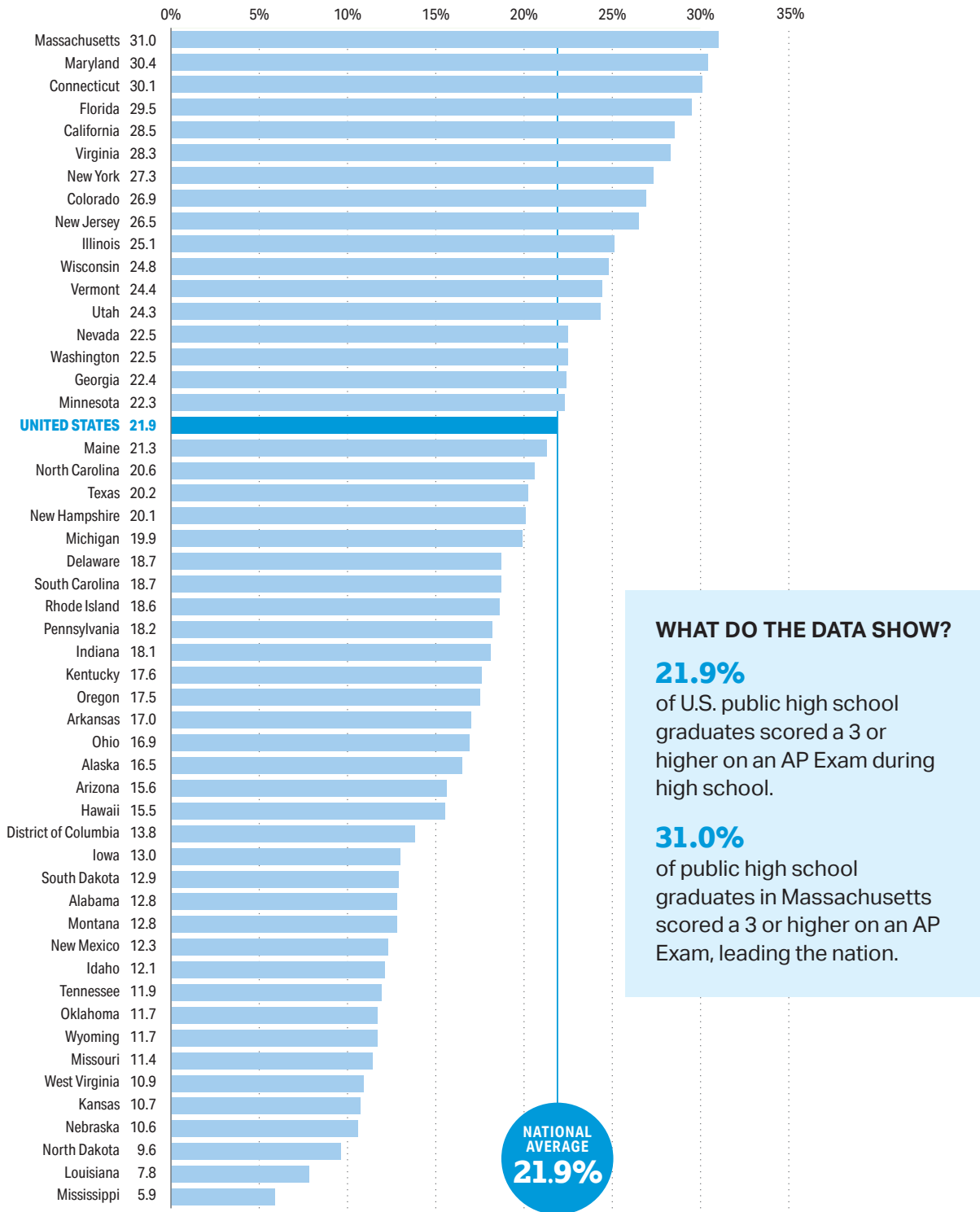
In the class of 2016, 36.2% of students took an AP Exam during high school, up from 22.9% of the class of 2006. Also, 21.9% of the class of 2016 scored a 3 or higher on at least one AP Exam, up from 14.3% of the class of 2006.⁶ This increase reflects the hard work of teachers and students, as well as a commitment from states and districts to provide students with greater access to academic opportunities.

- **Figure 1** shows the percentage of all U.S. public high school students in the class of 2016 who scored 3 or higher on an AP Exam during high school, by state. These data show the degree to which students are participating in AP Exams and are achieving success.
- **Figures 2a and 2b** reveal the progress states have made over one, three, five, and 10 years toward ensuring that their students have the opportunity and preparation to succeed in AP.
- **Figure 3** shows the score distributions, by state, for AP Exams taken by students in the class of 2016 throughout their time in high school.

6. Due to changes in the U.S. public school list and recent updates to the Western Interstate Commission for Higher Education (WICHE) projection of high school graduates, AP Cohort Data Report figures should not be compared to those in previous reports.

FIGURE 1

Percentage of the Class of 2016 Scoring a 3 or Higher on an AP Exam During High School



Raw numbers for this figure are available in the Appendix. States with a tie in the rankings are listed alphabetically.

FIGURE 2A

Percentage of the Classes of 2006, 2011, 2013, 2015, and 2016 Scoring a 3 or Higher on an AP Exam During High School, by State, Ranked by the 10-Year Percentage Point Change Appearing in Figure 2b

	Percentage of Graduating Class				
	2006	2011	2013	2015	2016
Massachusetts	18.8	23.3	26.5	29.8	31.0
Connecticut	18.7	23.9	26.9	30.0	30.1
Florida	18.5	23.7	26.1	28.3	29.5
Illinois	14.3	18.1	20.8	23.2	25.1
Rhode Island	8.3	12.0	14.4	17.4	18.6
Minnesota	12.1	17.6	19.7	21.8	22.3
New Jersey	16.3	20.5	22.8	25.3	26.5
Wisconsin	14.8	18.8	21.8	24.4	24.8
Colorado	17.4	21.3	23.8	27.0	26.9
Kentucky	8.6	12.4	15.2	17.8	17.6
Washington	13.5	17.9	20.0	21.8	22.5
Indiana	9.2	13.3	15.5	17.8	18.1
Maryland	21.8	26.5	29.0	30.6	30.4
Nevada	14.0	16.3	16.9	19.9	22.5
Hawaii	7.1	9.9	11.8	13.3	15.5
Michigan	11.6	15.5	17.3	19.4	19.9
California	20.6	22.0	24.0	27.5	28.5
Arkansas	9.2	13.5	15.2	16.9	17.0
Georgia	14.7	17.8	20.1	21.6	22.4
Oregon	9.9	13.5	15.6	16.7	17.5
Pennsylvania	10.6	13.5	15.4	17.6	18.2
UNITED STATES	14.3	17.2	19.2	21.3	21.9
Alabama	5.6	8.4	10.8	12.1	12.8
New Hampshire	12.9	16.9	17.6	19.5	20.1
Virginia	21.2	24.8	26.9	28.0	28.3
Ohio	9.9	12.5	14.2	17.1	16.9
New York	20.6	22.6	24.9	26.0	27.3
Vermont	17.8	21.5	23.8	26.0	24.4
Arizona	9.1	11.9	14.1	15.2	15.6
Maine	15.5	18.8	20.6	21.6	21.3
Texas	14.4	15.9	17.3	19.6	20.2
Iowa	7.3	10.0	10.9	12.5	13.0
District of Columbia	8.2	9.3	11.2	14.0	13.8
Missouri	5.8	7.9	9.4	10.9	11.4
South Carolina	13.2	14.4	16.2	18.4	18.7
Nebraska	5.2	7.9	9.3	10.6	10.6
Louisiana	2.5	4.1	5.1	7.3	7.8
Wyoming	6.7	8.9	9.5	11.0	11.7
Delaware	14.0	14.6	17.2	17.6	18.7
West Virginia	6.3	8.6	9.0	10.3	10.9
North Carolina	16.1	17.3	18.0	19.7	20.6
South Dakota	8.9	11.8	12.3	13.2	12.9
Tennessee	8.0	8.5	9.8	11.4	11.9
Alaska	12.7	12.5	13.5	15.7	16.5
Utah	21.0	22.2	23.8	24.7	24.3
Kansas	7.5	9.5	10.1	10.5	10.7
New Mexico	9.2	10.1	11.3	12.0	12.3
Montana	9.8	12.3	12.7	13.2	12.8
Idaho	9.4	11.9	13.0	11.4	12.1
Mississippi	3.3	4.1	4.4	5.5	5.9
North Dakota	7.2	7.8	8.9	10.3	9.6
Oklahoma	9.3	10.4	11.2	11.8	11.7

WHAT DO THE DATA SHOW?**Maryland**

had the highest percentage of public high school graduates score a 3 or higher on an AP Exam in four of the five years shown—2006, 2011, 2013, and 2015.

Massachusetts

had the highest percentage of public high school graduates score a 3 or higher on an AP Exam in 2016.

Due to changes in the U.S. public school list and recent updates to the Western Interstate Commission for Higher Education (WICHE) projection of high school graduates, AP Cohort Data Report figures should not be compared to those in previous reports.

Raw numbers for this figure are available in the Appendix. States with a tie in the rankings are listed alphabetically.

FIGURE 2B

1-Year, 3-Year, 5-Year, and 10-Year Change in the Percentage of Graduates Earning a 3 or Higher on an AP Exam During High School, by State, Ranked by the 10-Year Percentage Point Change

	Change			
	1-year	3-year	5-year	10-year
Massachusetts	1.2	4.5	7.7	12.2
Connecticut	0.1	3.2	6.2	11.4
Florida	1.2	3.4	5.8	11.0
Illinois	1.9	4.3	7.0	10.8
Rhode Island	1.2	4.2	6.6	10.3
Minnesota	0.5	2.6	4.7	10.2
New Jersey	1.2	3.7	6.0	10.2
Wisconsin	0.4	3.0	6.0	10.0
Colorado	-0.1	3.1	5.6	9.5
Kentucky	-0.2	2.4	5.2	9.0
Washington	0.7	2.5	4.6	9.0
Indiana	0.3	2.6	4.8	8.9
Maryland	-0.2	1.4	3.9	8.6
Nevada	2.6	5.6	6.2	8.5
Hawaii	2.2	3.7	5.6	8.4
Michigan	0.5	2.6	4.4	8.3
California	1.0	4.5	6.5	7.9
Arkansas	0.1	1.8	3.5	7.8
Georgia	0.8	2.3	4.6	7.7
Oregon	0.8	1.9	4.0	7.6
Pennsylvania	0.6	2.8	4.7	7.6
UNITED STATES	0.6	2.7	4.7	7.6
Alabama	0.7	2.0	4.4	7.2
New Hampshire	0.6	2.5	3.2	7.2
Virginia	0.3	1.4	3.5	7.1
Ohio	-0.2	2.7	4.4	7.0
New York	1.3	2.4	4.7	6.7
Vermont	-1.6	0.6	2.9	6.6
Arizona	0.4	1.5	3.7	6.5
Maine	-0.3	0.7	2.5	5.8
Texas	0.6	2.9	4.3	5.8
Iowa	0.5	2.1	3.0	5.7
District of Columbia	-0.2	2.6	4.5	5.6
Missouri	0.5	2.0	3.5	5.6
South Carolina	0.3	2.5	4.3	5.5
Nebraska	0.0	1.3	2.7	5.4
Louisiana	0.5	2.7	3.7	5.3
Wyoming	0.7	2.2	2.8	5.0
Delaware	1.1	1.5	4.1	4.7
West Virginia	0.6	1.9	2.3	4.6
North Carolina	0.9	2.6	3.3	4.5
South Dakota	-0.3	0.6	1.1	4.0
Tennessee	0.5	2.1	3.4	3.9
Alaska	0.8	3.0	4.0	3.8
Utah	-0.4	0.5	2.1	3.3
Kansas	0.2	0.6	1.2	3.2
New Mexico	0.3	1.0	2.2	3.1
Montana	-0.4	0.1	0.5	3.0
Idaho	0.7	-0.9	0.2	2.7
Mississippi	0.4	1.5	1.8	2.6
North Dakota	-0.7	0.7	1.8	2.4
Oklahoma	-0.1	0.5	1.3	2.4

WHAT DO THE DATA SHOW?**Massachusetts**

had a 12.2-point increase over 10 years in the percentage of public high school graduates earning a 3 or higher on an AP Exam, leading the nation. The state also had the largest five-year increase.

Nevada

had both the largest three-year increase and one-year increase in the percentage of public high school graduates earning a 3 or higher on an AP Exam.

7.6 point increase

since 2006 in the percentage of U.S. public high school graduates scoring 3 or higher on an AP Exam.

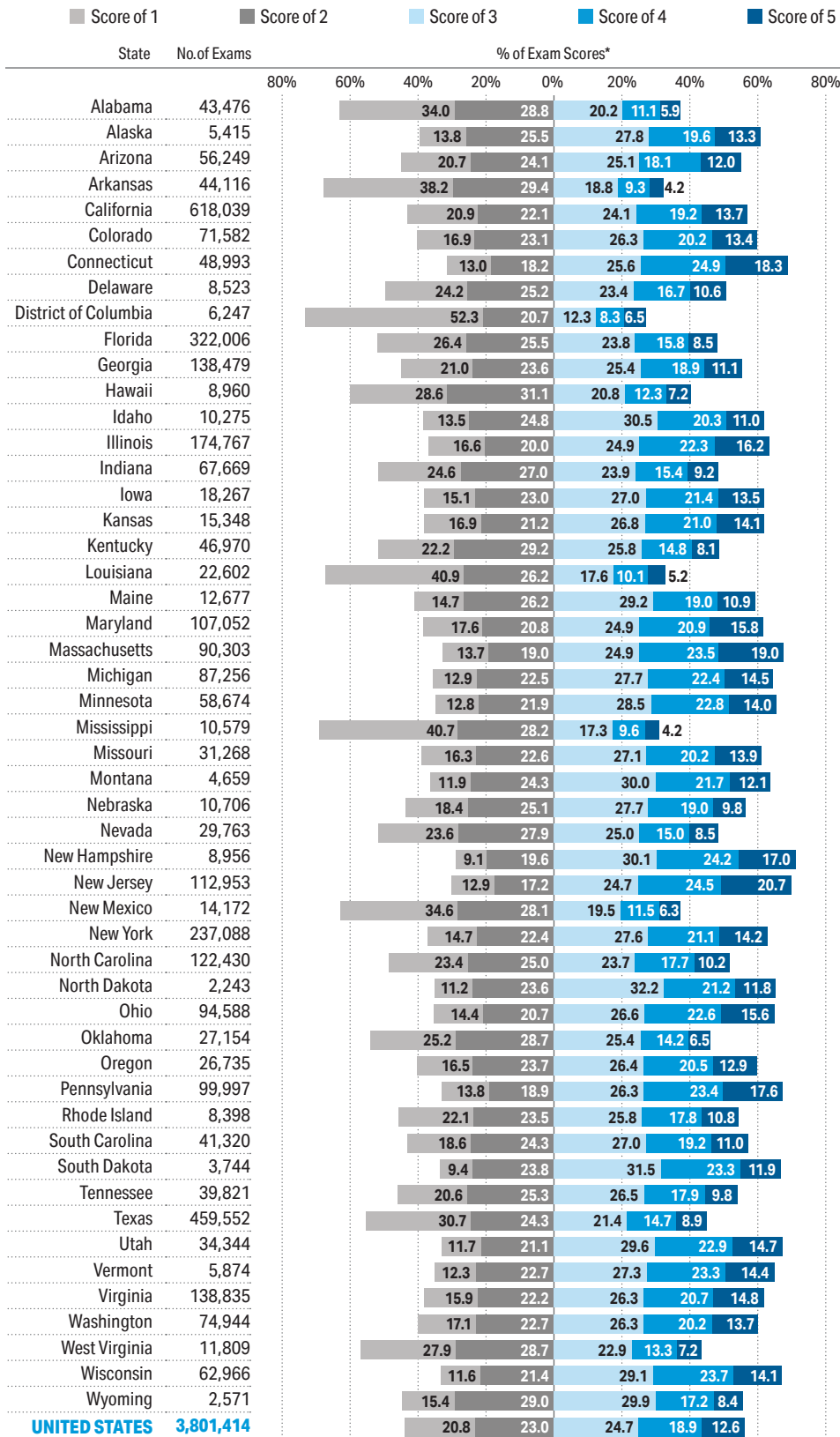
0.6 point increase

since 2015 in the percentage of U.S. public high school graduates scoring 3 or higher on an AP Exam.

Raw numbers for this figure are available in the Appendix. States with a tie in the rankings are listed alphabetically.

FIGURE 3

Score Distributions of AP Exams Taken by the Class of 2016 During High School, by State



*Due to rounding, percentages do not always add up to 100.0.

Opportunity for All Students

AP participation and performance data illustrate the degree to which students of all races/ethnicities—including black/African American, Hispanic/Latino, American Indian/Alaska Native, and Native Hawaiian/Other Pacific Islander students—have access to the challenging coursework exemplified by AP.

We believe that by providing opportunities to all students we can achieve the goal of increasing access together.

Equity: Creating Access and Opportunity for All Students

The College Board is dedicated to ensuring that every student has access to the academic opportunity embodied by the AP experience. Despite progress, some groups of students still remain underrepresented in AP classrooms and in the population of successful AP students. The AP Cohort Data Report provides a national overview of progress made in connecting students to AP and in eliminating barriers that may restrict access to groups that have been traditionally underrepresented.

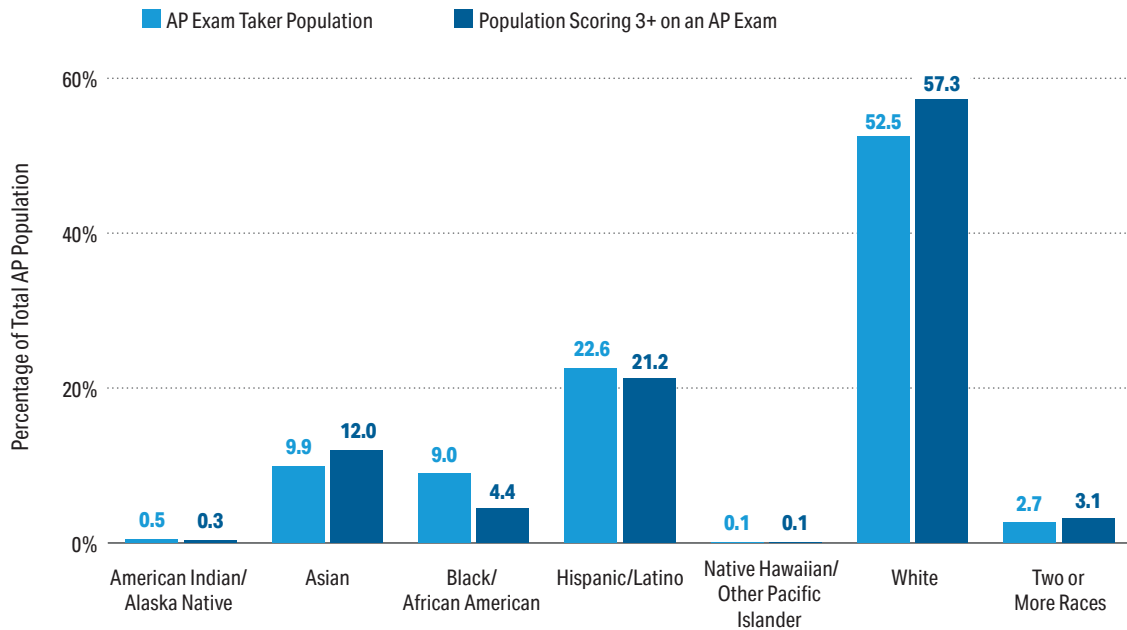
Ideally, the demographics of AP classes should reflect the demographics within each school, and the percentage of students earning a 3 or higher on an AP Exam should match the proportion of the population for each demographic group.

- **Figure 4a** shows the demographics of the population of the class of 2016 who took at least one AP Exam while in high school compared to the population of the class of 2016 who earned a 3 or higher on at least one AP Exam.
- **Figure 4b** shows the demographics of the entire class of 2016.
- The College Board's collection and reporting of race and ethnicity was updated in 2016 to align with U.S. Department of Education guidelines for the collection and reporting of race and ethnicity data in seven categories (Figure 4a). When the Western Interstate Commission for Higher Education (WICHE) performed its projections in fall 2016, it did not have sufficient years of states' data to project all seven race and ethnicity categories; therefore, WICHE projected race and ethnicity data into the five former categories (Figure 4b). We do not recommend comparing the data in Figure 4a directly to those in Figure 4b as doing so may lead to inaccurate conclusions.

The College Board strongly encourages states and districts to make equitable access a guiding principle for their AP programs and commit to providing all students with the opportunity to experience academically challenging coursework, even before they enroll in AP classes.

FIGURE 4A

Demographics of the AP Exam Takers in the Class of 2016

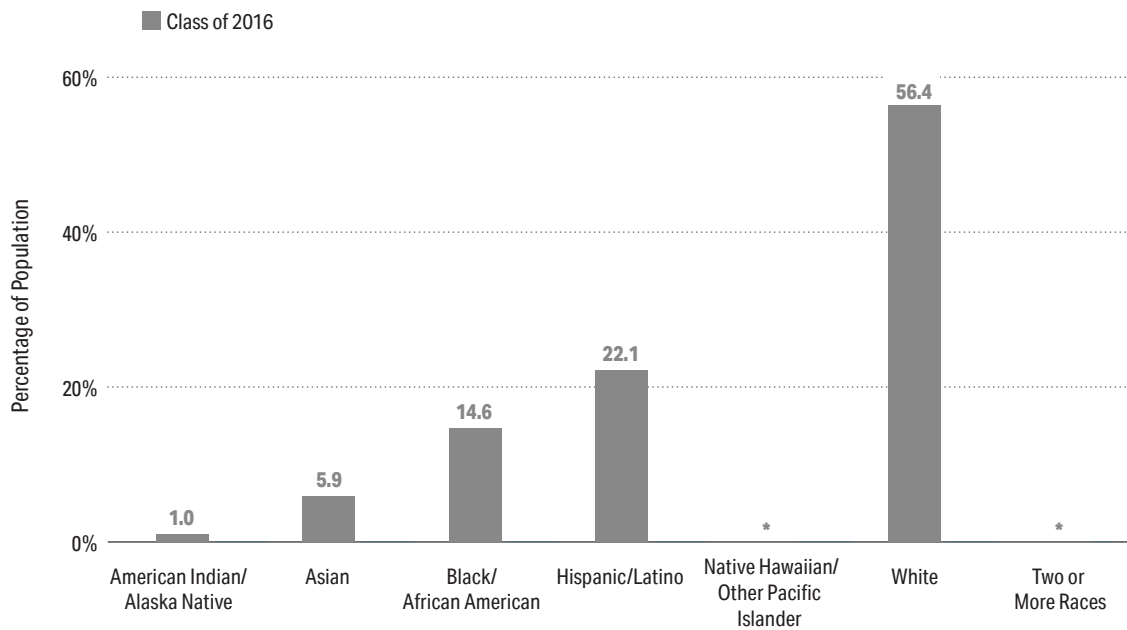


Because some AP Exam takers identify themselves as "Other" or do not provide race/ethnicity, the "AP Exam Taker" population in this figure only represents a total of 97.4% of all AP Exam takers in the class of 2016.

The race/ethnicity question asked of students changed starting in 2016 to align with U.S. Department of Education guidelines. For more information, please visit collegeboard.org/raceethnicity.

FIGURE 4B

Demographics of the Class of 2016



*The percentage of the class of 2016 for Native Hawaiian/Other Pacific Islander and Two or More Races could not be computed because the projected numbers of graduates were not available for these racial/ethnic groups. For more information, see page 17.

Focus on Low-Income Students

Closing the equity gap in AP participation and success for low-income students remains a vital component of ensuring that all students have the opportunity to experience the benefits of challenging coursework. Many schools and districts have focused their efforts to create increased access to AP for these underrepresented students. An examination of AP participation and performance among low-income students provides a measure of how well states and the nation as a whole are using education resources to promote equity.

Changes to Federal Funding for Low-Income AP Students

The number of low-income students participating in AP has grown substantially over the last two decades, largely as a result of federal funding. When the federal AP Test Fee Program began for the May 1999 AP Exam Administration, a total of 48,000 low-income students used federal funding to help cover the cost of AP Exams. In 2016, that number had grown to over 500,000 students.

Starting in academic year 2016-17, states will no longer be able to access funds through the federal AP Test Fee Program. The program was consolidated with many other education programs under the Every Student Succeeds Act (ESSA) Title IV, Part A block grant. Funds are available for AP activities under ESSA Title IV, as well as under Title I. States and districts can use Title IV funds to cover the cost of AP Exam fees for low-income students and increase general access to AP Exams. States can also set aside 3% of Title I funds to provide grants to school districts for direct student services, which include covering AP Exam fees and providing AP courses not currently offered. For more information about how states and districts can provide federal funding for their low-income AP students, visit collegeboard.org/ap-essa.

- **Figure 5** is sorted by the percentage of K–12 public school students in each state who are eligible for free or reduced-price lunch.* This allows for comparison among states with similar proportions of low-income students. The columns showing the percentage of low-income AP Exam takers and the percentages of successful, low-income AP Exam takers provides a picture of how equitably low-income students are represented in AP classrooms within each state.

* See footnote on page 20.

FIGURE 5
Equity Gaps Among Low-Income Students in the Class of 2016

	% of K-12 Students Eligible for Free or Reduced-Price Lunch [±]	% of AP Exam Takers Using an AP Exam Fee Reduction	% of AP Exam Takers Scoring 3+ During High School Using an AP Exam Fee Reduction	
70%	District of Columbia	99.2	47.2	39.6
	Mississippi	72.2	32.3	19.5
	New Mexico	67.2	47.8	44.6
	Louisiana	66.8	32.0	23.6
	Georgia	62.1	32.7	25.7
	Oklahoma	61.9	30.2	24.6
	Arkansas	61.2	36.0	27.0
60%	Texas	60.1	50.3	45.1
	Tennessee	58.8	24.1	17.8
	Alabama	58.4	23.6	14.4
	Florida	58.4	37.5	35.0
	California	58.1	45.2	41.2
	South Carolina	57.4	19.9	15.2
	Kentucky	54.8	31.5	24.0
	North Carolina	54.0	15.0	10.8
	Oregon	53.5	24.3	20.8
	Arizona	53.4	29.7	25.0
	Nevada	53.1	37.0	32.0
	UNITED STATES	52.0	30.1	24.9
	Illinois	51.4	30.9	23.4
	Hawaii	50.5	30.1	26.6
	New York	50.2	28.8	23.8
	Kansas	50.1	20.1	12.3
50%	Missouri	49.7	17.6	11.1
	Indiana	49.2	17.9	13.7
	Michigan	48.3	17.3	12.5
	West Virginia	47.9	20.4	16.5
	Idaho	47.4	22.9	19.9
	Rhode Island	46.8	27.9	19.4
	Washington	46.3	25.0	19.6
	Maine	45.8	16.1	13.3
	Nebraska	44.9	13.6	10.0
	Ohio	44.6	14.6	9.0
	Maryland	44.2	21.2	15.9
	Pennsylvania	43.6	17.5	12.3
	Alaska	43.0	12.5	9.9
	Montana	42.1	10.2	9.9
	Colorado	42.0	20.4	16.5
	Wisconsin	41.9	13.7	10.5
40%	Iowa	40.9	18.4	13.2
	Delaware	39.7	19.6	14.0
	Virginia	39.7	12.1	8.0
	South Dakota	39.6	8.2	7.5
	Vermont	39.4	11.9	9.6
	Massachusetts	38.3	23.1	17.3
	New Jersey	38.0	15.8	11.7
	Wyoming	37.7	7.9	6.4
	Connecticut	37.1	15.2	10.4
	Utah	37.0	10.2	9.0
30%	North Dakota	30.2	4.3	3.5
	New Hampshire	27.8	6.4	6.3
	Minnesota	38.4	*	*

WHAT DO THE DATA SHOW?

Texas

is the state closest to achieving equitable participation for low-income students.

[±]As there is no national data source on high school graduates' low-income status, K-12 estimates from the National Center for Education Statistics (NCES)—based on free or reduced-price lunch eligibility—have been used. AP fee reductions are based on this eligibility threshold. NCES estimates reflect all K-12 public school students from the 2013-14 school year; thus, a degree of caution is warranted as these data may not accurately reflect the class of 2016.

States with a tie in the rankings are listed alphabetically.

*Unable to estimate the portion of Minnesota's AP population from low-income households.

WHAT DO THE DATA SHOW?**There is room for improvement in increasing access to AP for low-income students.**

- Over half (52.0%) of U.S. public school students are from low-income households, compared to 30.1% of AP Exam takers in the class of 2016 and 24.9% of AP Exam takers earning a 3 or higher on an AP Exam in the class of 2016.
- The percentage of K–12 public school students eligible for free or reduced-price lunch has grown over the past year, from 51.3% to 52.0%.
- Despite the fact that low-income students have constituted an increasing share of both AP Exam takers and AP Exam takers earning a 3 or higher on an AP Exam, these students remain underrepresented in AP.



Next Steps

Strategies for Progress and Supporting Student Success

While there is no single strategy for building an effective and successful AP program, school, district, and state leaders should consider the following best practices to expand opportunities for all students to engage in challenging, college-level learning by increasing access, targeting instruction, promoting equity, and developing teachers.

	State	District or School
Increasing Access	<ul style="list-style-type: none"> Set a clear, measurable statewide goal for AP participation and success to be incorporated into the state report card. Establish AP participation and performance indicators in school accountability systems under Every Student Succeeds Act (ESSA). Develop policies that allow AP coursework and exam scores to substitute for statewide graduation requirements, including new AP courses such as AP Computer Science Principles. Use ESSA Title IV-A state funds to cover a portion of the AP Exam fees for low-income students. Encourage districts to use ESSA Title IV-A funds to cover AP Exam fees for low-income students. Work to ensure that students at rural schools have access to AP courses. 	<ul style="list-style-type: none"> Visit collegeboard.org/shareap for resources to help you recruit students to your district's AP classes. Use AP Potential to identify students at your school who are likely to succeed in AP courses. Where there are sufficient numbers of potential students for particular subjects, consider starting new AP courses or sections. Find out how your school can launch a new AP course at collegeboard.org/startapcourse. Offer parents a checklist and glossary of the academic opportunities offered at your school, along with a summary of the graduation requirements for their children. Ensure AP course offerings align with your district's graduation requirements. Use ESSA Title IV-A funds to cover AP Exam fees for low-income students.

	State	District or School
Targeting Instruction	<ul style="list-style-type: none"> Provide resources to schools and districts to support research-based programs that build content knowledge and skills—particularly in literacy and math—to prepare students for success in AP coursework, and in college and careers. 	<ul style="list-style-type: none"> Use AP Instructional Planning Reports to target areas for increased attention and focus in the curriculum. Adopt rigorous academic standards and curricula that allow students to build a progression of content and skills anchored in AP. Develop and share a road map of the content and skills that students will need to be college and career ready.
Promoting Equity	<ul style="list-style-type: none"> Provide targeted assistance and resources to schools serving traditionally underrepresented populations: for example, funding for materials, supplies, outreach efforts, and tutoring programs. Clearly communicate your state’s graduation requirements, and share information about funding opportunities that enable students to participate and succeed in AP. Communicate the advantages of AP for students attending your state’s universities. 	<ul style="list-style-type: none"> Review your district’s AP data, and require schools to review their AP enrollment practices. Build emotional and academic support for students through targeted peer mentoring, counseling, and tutoring programs. Implement summer programs (e.g., summer “boot” or “boost” camps) to help students prepare for specific AP courses. Use AP Potential results to invite students and parents from underrepresented backgrounds to targeted sessions of an AP night at your school that highlights the courses offered.
Developing Teachers	<ul style="list-style-type: none"> Build teacher capacity by requiring AP teachers to complete content-specific professional development before or during their first year and to update their training regularly. Make funding available for attending these professional development events. 	<ul style="list-style-type: none"> Develop plans to recruit, retain, train, and mentor new and less experienced AP teachers. Build Vertical Teams across middle and high school years so that all teachers become aware of what is assessed in AP courses. Ensure that teachers are familiar with the full catalog of professional development opportunities available online at AP Central® and through in-person, endorsed workshops.

Appendix

	Total Number of Graduates				Participation							
					Number of Graduates Who Took an AP Exam During High School				Percentage of Graduates Who Took an AP Exam During High School			
	2006	2011	2015	2016	2006	2011	2015	2016	2006	2011	2015	2016
Alabama	37,918	46,035	45,471	44,785	3,588	8,584	13,788	13,878	9.5	18.6	30.3	31.0
Alaska	7,361	8,064	7,457	7,416	1,452	1,596	1,868	1,896	19.7	19.8	25.1	25.6
Arizona	54,091	64,472	64,609	65,132	8,082	13,299	17,169	17,768	14.9	20.6	26.6	27.3
Arkansas	28,790	28,205	29,844	29,650	7,954	11,239	14,412	13,905	27.6	39.8	48.3	46.9
California	343,515	410,467	407,839	403,487	105,710	136,208	168,771	171,017	30.8	33.2	41.4	42.4
Colorado	44,424	50,122	51,502	52,585	12,258	17,324	22,218	22,628	27.6	34.6	43.1	43.0
Connecticut	36,222	38,854	36,423	36,835	9,162	12,921	15,167	15,505	25.3	33.3	41.6	42.1
Delaware	7,275	8,043	8,103	7,983	1,890	2,191	2,781	2,758	26.0	27.2	34.3	34.5
District of Columbia	2,863	3,477	3,828	3,886	804	1,442	1,970	2,029	28.1	41.5	51.5	52.2
Florida	134,686	155,493	162,574	160,287	44,893	72,813	86,374	84,986	33.3	46.8	53.1	53.0
Georgia	73,498	92,338	95,649	96,671	19,362	31,618	38,400	38,951	26.3	34.2	40.1	40.3
Hawaii	10,922	10,716	10,862	10,580	1,555	2,338	3,487	3,767	14.2	21.8	32.1	35.6
Idaho	16,096	17,525	18,781	19,355	2,470	3,016	3,351	3,619	15.3	17.2	17.8	18.7
Illinois	126,817	134,956	138,974	133,090	25,615	37,529	48,686	49,963	20.2	27.8	35.0	37.5
Indiana	57,920	66,133	65,858	65,620	10,816	19,998	23,707	24,140	18.7	30.2	36.0	36.8
Iowa	33,693	33,853	32,399	32,403	3,694	5,330	6,343	6,680	11.0	15.7	19.6	20.6
Kansas	29,818	31,370	31,322	32,106	3,475	4,901	5,484	5,659	11.7	15.6	17.5	17.6
Kentucky	38,449	43,031	41,956	42,245	6,452	10,697	14,825	14,706	16.8	24.9	35.3	34.8
Louisiana	33,275	35,844	37,559	38,836	1,833	3,529	8,921	9,891	5.5	9.8	23.8	25.5
Maine	12,950	13,653	12,574	12,664	3,225	4,104	4,270	4,290	24.9	30.1	34.0	33.9
Maryland	55,536	58,745	56,489	56,218	18,173	25,930	27,784	27,691	32.7	44.1	49.2	49.3
Massachusetts	61,272	64,724	64,872	65,848	15,981	21,487	27,851	29,007	26.1	33.2	42.9	44.1
Michigan	102,582	106,017	100,709	99,596	17,969	25,357	29,732	30,428	17.5	23.9	29.5	30.6
Minnesota	58,898	59,357	56,719	56,269	10,738	16,074	18,865	19,096	18.2	27.1	33.3	33.9
Mississippi	23,848	27,321	25,423	25,344	2,362	3,605	4,198	4,507	9.9	13.2	16.5	17.8
Missouri	58,417	62,994	60,472	60,847	5,227	8,560	11,151	11,704	8.9	13.6	18.4	19.2
Montana	10,283	9,732	9,357	9,365	1,531	1,823	1,978	1,905	14.9	18.7	21.1	20.3
Nebraska	19,764	20,331	20,395	20,372	1,643	2,672	3,510	3,559	8.3	13.1	17.2	17.5
Nevada	16,455	21,182	23,759	23,077	3,907	6,217	8,600	9,043	23.7	29.4	36.2	39.2
New Hampshire	13,988	14,495	13,462	13,405	2,582	3,206	3,449	3,675	18.5	22.1	25.6	27.4
New Jersey	90,049	95,186	94,549	94,276	20,588	26,502	32,773	34,445	22.9	27.8	34.7	36.5
New Mexico	17,822	19,352	19,405	18,970	3,396	4,269	5,311	5,624	19.1	22.1	27.4	29.6
New York	161,817	182,759	179,662	174,371	50,379	62,625	70,477	72,241	31.1	34.3	39.2	41.4
North Carolina	76,710	89,892	94,598	95,760	21,432	25,513	33,303	35,752	27.9	28.4	35.2	37.3
North Dakota	7,192	7,156	7,006	7,101	724	888	1,038	1,094	10.1	12.4	14.8	15.4
Ohio	117,356	124,229	110,724	114,949	18,591	24,757	30,269	31,066	15.8	19.9	27.3	27.0
Oklahoma	36,497	37,744	37,892	38,847	7,022	7,851	9,210	9,135	19.2	20.8	24.3	23.5
Oregon	32,394	34,723	34,071	34,610	5,174	7,592	9,015	9,604	16.0	21.9	26.5	27.7
Pennsylvania	126,681	130,284	124,669	123,758	19,995	27,224	32,824	33,698	15.8	20.9	26.3	27.2
Rhode Island	10,108	9,724	9,508	9,286	1,298	1,871	2,758	2,944	12.8	19.2	29.0	31.7
South Carolina	34,274	40,708	41,544	42,204	7,780	10,149	12,969	13,570	22.7	24.9	31.2	32.2
South Dakota	8,589	8,248	7,826	7,707	1,269	1,509	1,605	1,473	14.8	18.3	20.5	19.1
Tennessee	50,880	61,862	60,962	61,200	7,108	10,071	12,992	13,511	14.0	16.3	21.3	22.1
Texas	240,485	290,470	305,896	316,439	62,245	90,777	116,235	122,606	25.9	31.3	38.0	38.7
Utah	29,050	30,888	34,199	35,455	8,826	9,777	12,174	12,506	30.4	31.7	35.6	35.3
Vermont	6,779	6,932	6,303	6,211	1,779	2,259	2,341	2,211	26.2	32.6	37.1	35.6
Virginia	69,597	82,895	81,921	82,859	22,886	32,176	35,208	35,222	32.9	38.8	43.0	42.5
Washington	60,213	66,453	65,885	65,894	13,314	19,313	23,747	24,603	22.1	29.1	36.0	37.3
West Virginia	16,763	17,311	17,138	17,430	2,201	3,442	4,236	4,445	13.1	19.9	24.7	25.5
Wisconsin	63,003	64,135	59,743	60,037	13,435	17,247	20,837	21,270	21.3	26.9	34.9	35.4
Wyoming	5,527	5,600	5,556	5,613	728	892	1,102	1,121	13.2	15.9	19.8	20.0
UNITED STATES	2,813,412	3,144,100	3,134,298	3,138,934	644,573	902,312	1,109,534	1,136,792	22.9	28.7	35.4	36.2

Success								
Number of Graduates Who Scored 3 or Higher on an AP Exam During High School				Percentage of Graduates Who Scored 3 or Higher on an AP Exam During High School				
2006	2011	2015	2016	2006	2011	2015	2016	
2,127	3,872	5,497	5,748	5.6	8.4	12.1	12.8	Alabama
936	1,007	1,171	1,224	12.7	12.5	15.7	16.5	Alaska
4,917	7,675	9,796	10,132	9.1	11.9	15.2	15.6	Arizona
2,644	3,816	5,037	5,026	9.2	13.5	16.9	17.0	Arkansas
70,935	90,219	111,974	114,833	20.6	22.0	27.5	28.5	California
7,746	10,699	13,906	14,150	17.4	21.3	27.0	26.9	Colorado
6,765	9,292	10,918	11,093	18.7	23.9	30.0	30.1	Connecticut
1,017	1,172	1,425	1,494	14.0	14.6	17.6	18.7	Delaware
236	322	537	538	8.2	9.3	14.0	13.8	District of Columbia
24,883	36,777	46,038	47,242	18.5	23.7	28.3	29.5	Florida
10,779	16,473	20,615	21,609	14.7	17.8	21.6	22.4	Georgia
776	1,060	1,441	1,644	7.1	9.9	13.3	15.5	Hawaii
1,508	2,079	2,140	2,349	9.4	11.9	11.4	12.1	Idaho
18,122	24,443	32,208	33,428	14.3	18.1	23.2	25.1	Illinois
5,349	8,772	11,719	11,904	9.2	13.3	17.8	18.1	Indiana
2,469	3,383	4,039	4,203	7.3	10.0	12.5	13.0	Iowa
2,238	2,975	3,295	3,430	7.5	9.5	10.5	10.7	Kansas
3,294	5,319	7,463	7,419	8.6	12.4	17.8	17.6	Kentucky
841	1,474	2,756	3,018	2.5	4.1	7.3	7.8	Louisiana
2,001	2,563	2,712	2,692	15.5	18.8	21.6	21.3	Maine
12,081	15,589	17,309	17,095	21.8	26.5	30.6	30.4	Maryland
11,524	15,111	19,359	20,436	18.8	23.3	29.8	31.0	Massachusetts
11,925	16,403	19,492	19,793	11.6	15.5	19.4	19.9	Michigan
7,109	10,462	12,385	12,533	12.1	17.6	21.8	22.3	Minnesota
798	1,133	1,397	1,501	3.3	4.1	5.5	5.9	Mississippi
3,400	4,959	6,602	6,938	5.8	7.9	10.9	11.4	Missouri
1,011	1,196	1,231	1,197	9.8	12.3	13.2	12.8	Montana
1,020	1,606	2,165	2,167	5.2	7.9	10.6	10.6	Nebraska
2,298	3,451	4,734	5,201	14.0	16.3	19.9	22.5	Nevada
1,808	2,454	2,624	2,688	12.9	16.9	19.5	20.1	New Hampshire
14,718	19,481	23,961	24,946	16.3	20.5	25.3	26.5	New Jersey
1,633	1,954	2,330	2,339	9.2	10.1	12.0	12.3	New Mexico
33,321	41,351	46,788	47,688	20.6	22.6	26.0	27.3	New York
12,355	15,510	18,646	19,702	16.1	17.3	19.7	20.6	North Carolina
517	555	722	681	7.2	7.8	10.3	9.6	North Dakota
11,590	15,491	18,894	19,429	9.9	12.5	17.1	16.9	Ohio
3,394	3,932	4,490	4,564	9.3	10.4	11.8	11.7	Oklahoma
3,215	4,683	5,680	6,060	9.9	13.5	16.7	17.5	Oregon
13,484	17,610	21,930	22,534	10.6	13.5	17.6	18.2	Pennsylvania
844	1,167	1,655	1,726	8.3	12.0	17.4	18.6	Rhode Island
4,532	5,855	7,633	7,911	13.2	14.4	18.4	18.7	South Carolina
762	974	1,031	997	8.9	11.8	13.2	12.9	South Dakota
4,076	5,275	6,934	7,268	8.0	8.5	11.4	11.9	Tennessee
34,721	46,060	59,823	63,963	14.4	15.9	19.6	20.2	Texas
6,100	6,861	8,434	8,613	21.0	22.2	24.7	24.3	Utah
1,206	1,493	1,640	1,517	17.8	21.5	26.0	24.4	Vermont
14,734	20,524	22,960	23,430	21.2	24.8	28.0	28.3	Virginia
8,154	11,865	14,335	14,842	13.5	17.9	21.8	22.5	Washington
1,064	1,481	1,764	1,904	6.3	8.6	10.3	10.9	West Virginia
9,347	12,057	14,567	14,883	14.8	18.8	24.4	24.8	Wisconsin
368	501	612	655	6.7	8.9	11.0	11.7	Wyoming
402,692	540,436	666,814	688,377	14.3	17.2	21.3	21.9	UNITED STATES

About the College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up more than 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success—including the SAT® and the Advanced Placement Program®. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools.

For further information, visit collegeboard.org.