- Define the attributes, protocols and resources to quickly and formally enact the recommendations of the Statewide STEM Education Strategy;
- Support districts and schools engagement with each other and with state and national partners, either in person, online or by other means;
- Support effective decision-making, measurement and reporting on STEM tools, policies and practices;
- Research and recruit public and private experts, assets and resources for North Carolina's STEM needs;
- Accept, coordinate and rapidly disperse public and private investments for scaling high-quality STEM programs; and
- Advise on the alignment of policies, practices and partnerships with K20, private, and other sectors impacting STEM education, and vice versa.

The North Carolina STEM Community Collaborative currently has all of the required attributes, is under contract with NC Department of Public Instruction for delivery and advisement on the framework for this STEM Strategy (until March 2012), and has signaled its willingness to organize its future operations, recruit resources and serve as the state's public/private partner for STEM needs of the state, prioritizing the effort above any program with which it currently engages.

Strategy: Incentivize collaborations based on evidence-based policies, programs and practice that greatly increases the number of students gaining STEM skills and continuing in STEM fields of work.

STEM Education occurs at the local level – in the classroom, at the home, in a museum, at a business. As referenced, over 500 organizations engaged in STEM programs are documented. Many of these STEM programs quietly and effectively engage students, increase learning, and serve their target audience. Collaborations with other organizations occur – when mutually beneficial or led by visionary leaders – but, too often, funding, self-interest, energy, and/or programmatic incongruities serve as barriers to large to overcome.

North Carolina should incentivize collaborations of programs, schools and partners to advance the number of students gaining STEM skills and continuing fields of work. Incentives like the following, when requiring collaboration, have helped overcome barriers:

- Collaborative Grants – supporting evidence-based programs to extend to new geographies or new target audiences through multi-stakeholder collaboration

- Challenges or Competitions – setting up competitions or design challenges can fuel multi-stakeholder collaboration by providing a goal and some honor or resources for success. X Prize, Ashoka Challenge, or US Department of Education challenges are examples for possible emulation.

- Honors & Awards – celebration of partnerships, innovation and collaborations that extend student STEM skills and STEM fields of work. The Burroughs Wellcome Fund, NC SMT Center, and NC DPI and many others award individuals and organizations in Science or Math. Such incentives focused on collaborations should also be considered.

- Media or Travel Support – by providing resource support for travel to face-to-face conferences or study trips or supporting media attention for viable policies, programs and practice across organizations, the barriers for resource-stretched organizations can be overcome.

Strategy: Establish a formal STEM Council to facilitate and coordinate the implementation of North Carolina's comprehensive STEM strategy.

Science, Technology, Engineering, and Mathematics (STEM) education is vital in positioning NC to have a world-class workforce capable of competing in a global market.

It is recommended that North Carolina formally establish a STEM Council to facilitate and coordinate the implementation of North Carolina's comprehensive STEM strategy. It is imperative North Carolina develop and maintain continuity among the STEM efforts of the Department of Public Instruction, community colleges, public and private universities and the private sector.

Endnotes

This document serves as a ***Draft Framework for this Statewide STEM Strategy***, with the concurrence of the Governor's Education Cabinet, North Carolina's education systems' leadership, the Joint Legislative Joining Our Business & Schools (JOBS) Commission, the NC STEM Advisory Panel, and other public and private partners. The information, recommendations and findings of this report are informed by a broad set of research, reports, data, interviews, initiatives and efforts, including but not limited to:

- *Career & College: Ready Set Go!* North Carolina's K20 Education Plan, The Honorable Governor Beverly Perdue
- Statewide meetings and research of the NC Joining Our Business & Schools (JOBS) Commission, chaired by The Honorable Lt. Governor Walter Dalton
- The Governor's Education Cabinet, North Carolina General Assembly "SL 2010-41 Education Cabinet to Set STEM Priority & Goals", and research conducted by Education First Consulting
- The Career-Ready Commission Report, 2010, chaired by Superintendent June Atkinson
- UNC Tomorrow Report (2008), Inventory of University STEM Programs For K12(v2, 2009), and other research of the University of North Carolina System and its institutions
- NC Community College System Listening Tour, SuccessNC (2010), interviews and other data of NC Community College System and its institutions
- Advancing Innovation in NC (2009), Letter to Governor Beverly Perdue on STEM Needs (2010) and other research and data from the NC Department of Commerce and the NC Board of Science and Technology
- Interviews, research, findings and recommendations of the NC STEM Advisory Panel as well as 600+ local, state and national leaders from public and private organizations, conducted by the NC STEM Community Collaborative
- Publications from the Presidential Office of Science & Technology, US Department of Education, National Governor's Association, US Chamber of Commerce, Business-Higher Education Forum, Manufacturing Institute, Battelle, the Bill & Melinda Gates Foundation and others.

Appendix I – Current & Needed Initiatives

The following section highlights **Current Initiatives** and **Needed Initiatives** at the K-12 and Community College level, aligned with the goals within each of the three priorities.

Priority I: Increase STEM Achievement

Current Initiatives

K-12

1. STEM initiative is included in the Race to the Top federal grant to spur public school innovation to include:
   - Great teachers and leaders
   - Quality standards and assessments
   - Turnaround of lowest-achieving schools
   - Data systems to improve instruction
2. Common Core Standards are adopted in Mathematics and Language Arts; essential standards are adopted for all courses to be implemented 2012-2013
3. Ninety schools have Project Lead the Way (PLTW) programs to encourage students to enter the engineering profession
4. Seventy-two STEM Career Academies in Career and Technical Education (CTE) are operating in the State
5. The North Carolina New Schools Project (NC NSP) is developing 50 STEM schools (20 of which are RttT). The STEM curriculum reflects the state's economic workforce needs in North Carolina. The schools initially include the areas of energy and sustainability; health and life science; aerospace and advanced manufacturing; and biotechnology and agriscience.
6. Nine Transformation schools have STEM as strategy for improvement
7. The North Carolina Virtual Public Schools (NCVPS) is developing eight STEM courses to provide quality teaching resources to remote and low achieving programs.
8. At DPI the 21st Century Community Learning Centers (21st CCLS), under Title IV B federally funded out-of-school projects, are infusing STEM activities into programs.
9. Career and College Promise is a state initiative to broaden and strengthen postsecondary completion.

Community Colleges

10. Completion by Design aims to build on proven, existing practices already underway at a number of forward-thinking community colleges by focusing on new approaches to key events during students' educational experience, from the first time they connect to the college through completion.
11. Enhance Math Capabilities by furthering the development of student math competencies for in-demand STEHM (Science, Technology, Engineering, Health and Math) careers by developing lab-based math instructional models and alternatives to the algebra/calculus track. Work with UNC System to develop General Education certificate requirement prior to transfer with inclusion of gatekeeper math and English courses.
12. National Association of Manufacturing (NAM) Endorsed Skills Certification System involves aligning manufacturing-related associate degree programs at NC Community Colleges such as machining or mechanical engineering technology with accepted third party industry credentials like National Institute of Metal Working (NIMS) or the Manufacturing Skills Standards Council (MSSC) certifications. In obtaining industry-valued certifications, community college students will

demonstrate to prospective employers that they possess the skills and knowledge to be valuable employees.

13. Expand Health Care Programs through weighted funding and greater use of distance education/simulation to enhance instruction and meet clinical requirements.

14. Facilitate College Readiness Standards by collaborating with State Board of Education/DPI to further utilization of community college placement testing prior to 12th grade and coordinate development of remediation strategies to include summer developmental bridge programs. Work with DPI and UNC System to develop alignment between common core high school standards, community college gatekeeper English and math courses, and UNC English and math requirements.

15. Strengthen Technical Education by reengineering technical education to allow for umbrella degrees in information, engineering, transportation, environmental, energy and building technologies with common general education core and stackable credentials/certificates and integrated emphasis on sustainability.

16. Focus Technology-enhanced Initiatives on developing media-based curriculum content, and expanding and coordinating capabilities for immersive learning, simulation, e-books and professional development to support strategic course development targets such as technical education's academic and technical cores; developmental and gatekeeper math redesign; concept-based nursing and health information technology curriculums; and certificate of transfer courses.

Needed Initiatives and Actions
K-12

1. Incorporate STEM strategies in Common Core and Essential Standards for staff development
2. Expand Math and Science for a fourth course in a sequence to include STEM curriculum strategies to encourage students to continue their education in STEM fields
3. Identify Level IV Math and Science substitute courses in the Programs of Study
4. Incorporate STEM strategies in science, technology, engineering and mathematics to develop interest in STEM related occupations
5. Define and support needs of career academies and identify success stories to share
6. Develop plan for recruiting underrepresented minorities and connect with community programs for after school
7. Develop virtual courses to offer STEM related courses in remote areas
8. Develop engineering standards for K-5, 6-8, 9-12 and infuse in curriculum
9. Encourage schools to take the college credit exam with PLTW courses
10. Encourage students to take four courses of the PLTW STEM curriculum
11. Assure schools in Turnaround status who are using a STEM strategy for their improvement plan have access to all resources and communications in STEM and receive the opportunity to participate
12. Provide staff development with teacher education instructors, teachers, counselors and school leaders on:
    a. STEM curriculum
    b. Community and industry engagement
    c. Connections with postsecondary
13. Create, recruit, hire, train, and retain NC STEM teachers initiative to produce the best and brightest professional educators

14. Collaborate with teacher education to support the lateral entry program to recruit teachers to teach in STEM areas

Community Colleges

15. Increase opportunities for entry level job training and degree attainment tied to industry certifications and licensure, and integration with Career Readiness Credentials and employability skills training.
16. Develop model for degree completion to support joint statewide targets with UNC System.

Priority II: Bolster Community Support
Current Initiatives
K-12

1. MCNC NC STEM Community Collaborative provides a single organizing unit for both public and private organizations to support scaling what works in STEM education.
2. Regional Education Services Alliances (RESA) provide coordination of regional activities in educational areas and the
Economic Development Education Regions coordinate economic development in seven regions with State Board of Education members participating in each region.
3. The NC New Schools Project (NCNSP) collaborates with the private sector and higher education in the development of networks of STEM schools and districts, including on-going work and leadership through economically themed Industry Innovation Councils. NCNSP also convenes state and national conferences to build support and understanding for the need for comprehensive innovation in schools to ensure students graduate college and career ready.

Needed Initiatives and Actions
K-12

1. Build a Statewide STEM website for all North Carolina
   - Identify and connect schools
   - Identify resources and programs
   - Create a communication portal for schools
2. Build marketing plans on STEM career opportunities, course needs in school, and postsecondary options to recruit students, educators, parents and the community
3. Market the National Association of Engineers 14 Grand Challenges for Engineering to K-12 educators to:
   - Promote an awareness of STEM related issues
   - Identify issues facing the US in the 21st Century
   - Integrate them throughout education
4. Educate educators, parents and students about our need for STEM educated professionals capable of solving 21st Century concerns
5. Market STEM programs including summer programs for teachers , counselors and students
6. Market North Carolina School of Science and Math's programs for enrichment and professional development for teachers and counselors
7. Increase collaboration among schools, community colleges, colleges and universities, businesses, museums and other interested groups

Community Colleges

8. Enhance and expand the reach of the community college system STEM outreach through the use of BioNetwork's Mobile Training and Outreach program

Priority III: Leverage, Connect and Increase STEM Resources

Current Initiatives
K-12

1. The NC New Schools Project is developing STEM schools that serve as models for professional development and for the State curriculum in four theme areas as well as STEM literacy.
2. NC STEM Community Collaborative is building a web based network of STEM schools, resources, professional development and the ability to communicate among schools
3. The North Carolina School of Science and Mathematics provides specialized curriculum for 650 full-time students; Advanced Placement courses and enrichment programs to nearly 4000 students statewide, and professional development for more than 5000 North Carolina educators
4. Golden LEAF Foundation is supporting 10 STEM grants to grades 4-9
5. Engineering is Elementary® (EiE) sponsored by the Museum of Science in Boston, MA, is a project fostering engineering and technological literacy among children. The curriculum promotes K-12, science, technology, engineering and mathematics (STEM) learning and connects with literacy and social studies. There are three (plus 11 have received training) school systems in North Carolina using this curriculum. Professional development is sponsored by a staff member in the North Carolina State University College of Engineering
6. 4-H is developing STEM curriculum for out-of-school programs
7. NC Science, Math and Technology Education Center, through an USED Investing in Innovation (I3) Grant, is validating the implementation and impact of science inquiry-based instruction and materials in 46 schools (grades 1-8; 1100 teachers) in 7 districts over five years.
8. Burroughs Wellcome Fund supporting 5 low-performing elementary schools and one low wealth district for a six-year Singapore Math initiative, funding up to 8 new afterschool programs each year across the state that offer STEM activities, and identifying and funding for five years master STEM teachers to work with their districts and the state.
9. The Kenan Fellows Program for Curriculum and Leadership Development pairs at least 50 outstanding, practicing North Carolina teachers annually with STEM leaders in industry, education and academia for a summer of research and intensive professional advancement, driven by North Carolina's specific economic development needs to increase STEM literacy and produce effective lessons for K12 educators.
10. NC Center for Afterschool Programs is partnering with the NC Museum of Natural Sciences to host annual statewide Youth STEM Summits and more broadly connect museums across the state with afterschool programs in the arenas of education, outreach, and professional development.

Needed Initiatives and Actions
K-12

1. Catalog programs and resources available to STEM K-12
2. Define STEM attributes for North Carolina public schools

3. Identify resources to support STEM inside and outside of the agency
4. Identify programs inside and outside the agency to infuse STEM education
5. Provide structure for private and public funds and in-kind resources to efficiently support scaling programs that are working to reach more students, educators, and communities

Community Colleges

6. Enhance weighted funding for technical education programs at community colleges.

Appendix II – Additional Progress Measures

The following sections highlight additional Progress Measures at the K-12 & Community College level, aligned with the three priorities.

Potential Progress Measures/Indicators

Increase STEM Achievement

K-12

1. The percentage of STEM students graduating from high school in four years is increased
2. Fewer STEM students require remediation in postsecondary
3. There is an increase in postsecondary enrollment in STEM areas
4. The number of schools obtaining a STEM designation is increased
5. Student achievement in mathematics and science is improved.
6. There is greater inclusion of mathematics and science in the elementary schools
7. The number of students taking a fourth course in a sequence of math and science is increased
8. The number of students in a STEM career pathways is increased
9. The number of students continuing their education in STEM is increased
10. More underrepresented females, minorities, and economically disadvantaged students are in level four courses
11. The underrepresented females, minorities, and economically disadvantaged students in postsecondary education in STEM areas are is increased
12. The number of students completing virtual STEM courses is increased
13. Engineering standards are developed for K-5, 6-8, 9-12 and infused in curriculum
14. The number of students who complete college exams for PLTW courses is increased
15. The number of students in four PLTW courses is increased
16. STEM initiatives helped decrease the number of schools in Turnaround status
17. All teachers have access to job-embedded professional development to build educator capacity in both content and pedagogy for STEM learning experiences
18. The number of teachers and administrators participating in quality STEM education professional development is increased
19. The number of teachers qualified to teach in STEM areas is increased

Community Colleges

20. Percentage of first-time fall credential-seeking community college students who successfully complete ("C" or better) at least twelve hours within their first academic year
21. Percentage of previous developmental math students successfully completing a credit math course with a "C" or better upon the first attempt (within one year of developmental completion).

22. Percentage of first-time fall community college credential-seeking student graduation, transfer, or still enrolled with 36 hours after six years
23. Percentage of community college associate degree completers and those who have completed 30 or more credit hours with a GPA of 2.00 or better at a four-year college or university after two consecutive semesters within the academic year.

Bolster Community Understanding

1. Website portal is developed to connect schools identifying resources and create an communication portal for schools
2. Marketing plan is developed for :
    - Career opportunities
    - Postsecondary options
    - 14 Grand Challenges
    - Community Understanding
3. Data systems are established to measure student success and inform school personnel and legislature about how to improve the delivery of STEM education
4. Collaboration among interested groups is evident

Leveraging & Connecting Resources

1. Directory of programs and resources and professional development is defined for school use
2. Curriculum in STEM areas has infused project-based activities for all teachers
3. Aerospace; Health Sciences; Pre-engineering; and Agriscience and Biotechnology curriculum are developed for schools
4. There is an increase in the number of resources available to the schools for STEM education
5. There is an increase in the number of STEM out-of school programs available

Appendix III – STEM Schools Rubric (Draft)

(pdf)

Appendix IV – Web-based Resource Design Documents

(pdf)

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[1] Education First, *North Carolina Education Cabinet: STEM Stakeholder Interview Findings*, March 8, 2011.
Additional References

[2] President Barack Obama, *State of the Union Address*, January 25, 2011

[3] White House Press Release, *President Obama to Announce Major Expansion of "Educate to Innovate" Campaign to Improve Science, Technology, Engineering and Math (STEM) Education*, September 16, 2010

[4] Change the Equation, *Why STEM?* www.changetheequation.org, 2011

[5] NC Commission on Workforce Development, *State of the North Carolina Workforce 2011-2020*, June 2011.

[6] NC Office of the Governor, *Jobs Now*, www.governor.state.nc.us, 2011

[7] NC Commission on Workforce Development, *State of the North Carolina Workforce: An Assessment of the State's Labor Force Demand and Supply 2007-2017*, January 2007

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North Carolina

North Carolina

Table of Contents

About This Report

By combining national, state, and AP data, this report provides educators and policymakers with information they can use to celebrate their successes, understand their unique challenges and set meaningful goals to increase opportunity for all students. It's important to note that while AP Exams are valid measures of students' content mastery of college-level studies in specific academic disciplines, AP results should never be used as the sole measure for gauging educational excellence and equity.

Because reliable demographic data for nonpublic schools are not available for all states, this report represents public school students only. Additionally, this report looks at students' entire experience with AP — tracking exams taken by graduates throughout their high school career — as opposed to reporting exam results from a particular calendar year.

Additional data are available at apreport.collegeboard.org.

Note: Throughout this report, public high school graduates represent projections supplied in *Knocking at the College Door* (2008), Western Interstate Commission for Higher Education.

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Figure 1
Growth in AP participation and success

- Number of graduates leaving high school having taken an AP Exam
- Number of graduates scoring 3+ on an AP Exam at any point in high school

13,159	21,142	24,558	25,543
7,946	12,291	14,995	15,496
2001	2006	2010	2011
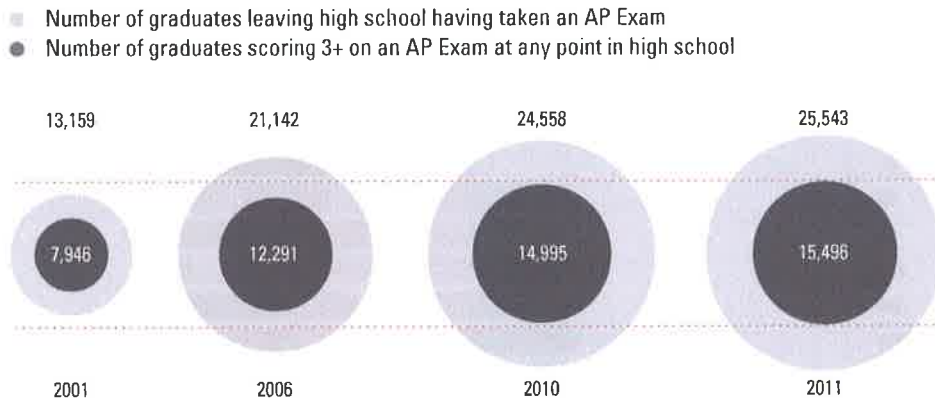
More graduates

are succeeding on AP Exams today than took them in 2001

Figure 2
Participation in and success on AP Exams in the class of 2011

- Percentage of graduates leaving high school having taken an AP Exam
- Percentage of graduates scoring 3+ on an AP Exam at any point in high school

Total Number of Students: 84,401

Percentage of North Carolina Student Population

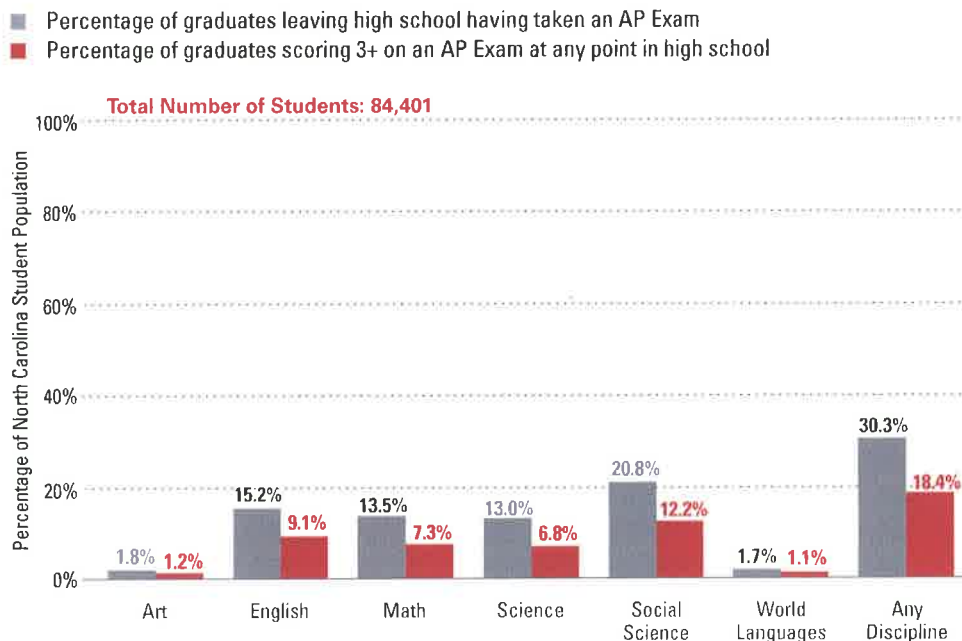|	Art	English	Math	Science	Social Science	World Languages	Any Discipline
Taken	1.8%	15.2%	13.5%	13.0%	20.8%	1.7%	30.3%
Scored 3+	1.2%	9.1%	7.3%	6.8%	12.2%	1.1%	18.4%

Social science

had the greatest number of students achieving a score of 3 or higher

Subject Area Exams:
- Art: Art History, Music Theory, Studio Art: Drawing Portfolio, Studio Art: 2-D Design Portfolio and Studio Art: 3-D Design Portfolio
- English: English Language and Composition and English Literature and Composition
- Math: Calculus AB, Calculus BC, Computer Science A, Computer Science AB* and Statistics
- Science: Biology, Chemistry, Environmental Science, Physics B, Physics C: Electricity and Magnetism and Physics C: Mechanics
- Social Science: Comparative Government and Politics, European History, Human Geography, Macroeconomics, Microeconomics, Psychology, United States Government and Politics, United States History and World History
- World Languages: Chinese Language and Culture, French Language and Culture, French Literature*, German Language and Culture, Italian Language and Culture*, Japanese Language and Culture, Latin Literature*, Latin: Vergil, Spanish Language and Spanish Literature

* The AP Computer Science AB, French Literature, and Latin Literature Exams were last offered in May 2009. AP Italian Language and Culture was last offered in May 2009, and was reinstated in the 2011-12 school year.

Figure 3
Score distribution of AP Exams taken by the class of 2011 during high school[+]

Ten Most Popular AP Exams — ■ Score of 1 ■ Score of 2 ■ Score of 3 ■ Score of 4 ■ Score of 5

Rank	Subject	No. of Exams	Score 1	Score 2	Score 3	Score 4	Score 5
	Chinese Language and Culture	41		2.4	12.2		85.4
	German Language and Culture	90	6.7	12.2	33.3	26.7	21.1
	Spanish Literature	90	8.9	13.3	23.3	33.3	21.1
	Studio Art: Drawing Portfolio	255	2.4	21.2	44.3	20.4	11.8
	Physics C: Mechanics	304	12.8	13.2	16.4	28.3	29.3
	Studio Art: 2-D Design Portfolio	354		23.4	39.5	24.0	10.5
10	Calculus BC	2,678	18.9	7.3	19.2	14.5	40.1
	Physics C: Electricity and Magnetism	140	10.8	18.6	14.3	21.4	35.7
	Spanish Language	916	16.3	13.9	18.4	25.1	26.3
	Comparative Government and Politics	457	15.8	17.7	18.6	25.4	22.5
4	Psychology	7,138	20.4	13.3	20.8	26.9	18.7
	Human Geography	1,735	17.6	17.3	24.8	24.1	16.3
	Physics B	997	18.2	19.0	29.5	20.5	12.9
2	English Language and Composition	9,668	9.6	29.2	31.2	20.9	9.1
	Japanese Language and Culture	20	35.0	5.0	5.0	15.0	40.0
	Studio Art: 3-D Design Portfolio	50	2.0	38.0	28.0	28.0	4.0
	Music Theory	530	13.8	27.0	21.5	19.4	18.3
	Art History	415	21.0	20.5	29.9	18.8	9.9
9	United States Government and Politics	3,867	17.3	24.2	27.3	16.6	14.6
3	English Literature and Composition	7,887	9.2	32.8	33.1	17.8	7.1
7	Statistics	5,399	21.0	21.2	26.3	21.3	9.3
	French Language and Culture	202	18.6	24.3	28.7	17.3	10.9
	Macroeconomics	365	19.7	24.1	23.0	23.6	9.6
	European History	2,249	30.2	13.8	34.9	14.3	6.8
5	Environmental Science	6,946	23.1	21.4	17.5	25.8	12.3
	World History	2,673	18.9	25.6	26.7	16.9	12.0
1	United States History	10,348	16.8	28.1	25.1	19.8	10.1
	Chemistry	2,226	30.3	15.5	20.2	16.9	17.1
	Computer Science A	296	39.2	8.8	11.5	22.0	18.6
	Latin: Vergil	122	30.3	18.9	18.9	23.8	8.2
	Microeconomics	304	27.6	23.4	23.0	18.8	7.2
8	Biology	4,017	35.7	15.9	15.6	15.6	17.2
6	Calculus AB	5,895	40.9	11.1	17.0	13.7	17.3
	Computer Science AB*	3					
	French Literature*	0					
	Italian Language and Culture*	0					
	Latin Literature*	3					

[+] Percentages do not always equal 100% due to rounding.

* The AP Computer Science AB, French Literature, and Latin Literature Exams were last offered in May 2009.
 AP Italian Language and Culture was last offered in May 2009, and was reinstated in the 2011-12 school year.

Courses with fewer than five exam-takers were omitted from the data for the class of 2011.

CollegeBoard

Low Income

Figure 4
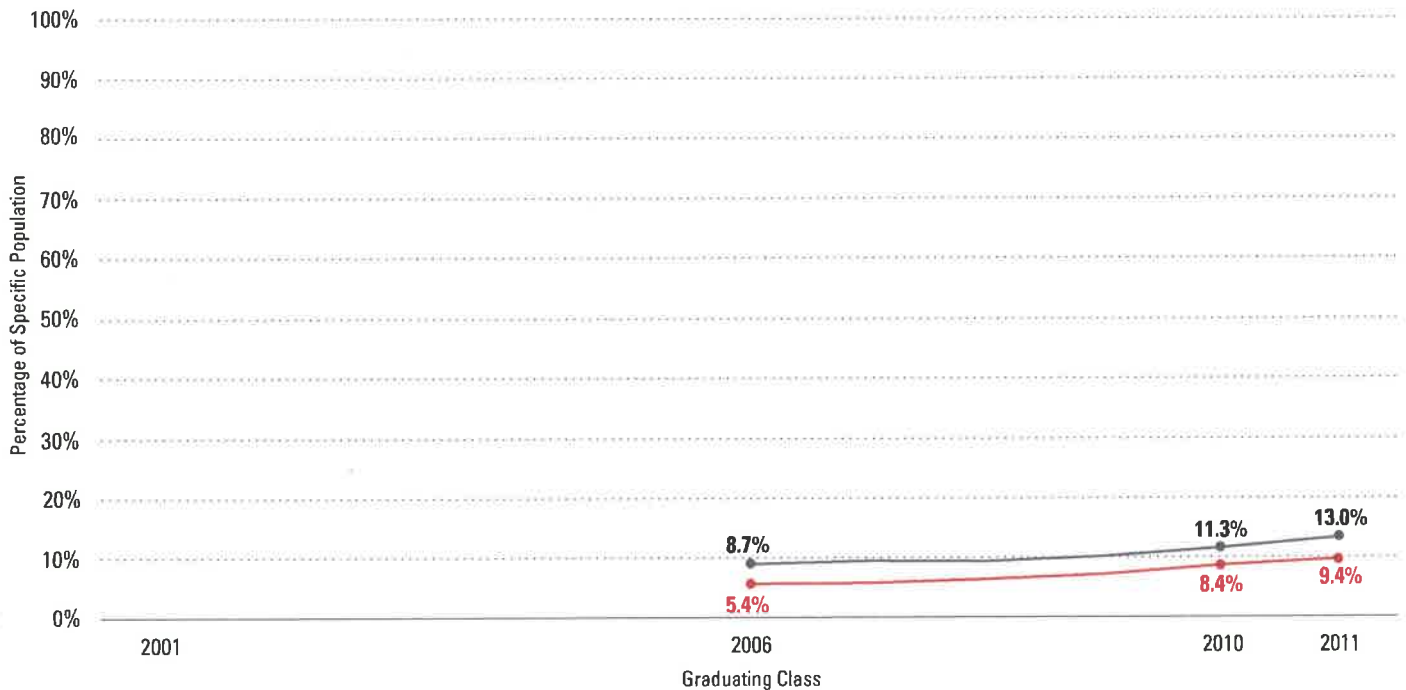## Trends in AP Exam participation and success

The percentage or number of ...

- graduates leaving high school having taken an AP Exam
- graduates scoring 3+ on an AP Exam at any point in high school

... who are from low-income backgrounds

8,472
exams were taken by low-income graduates in the class of 2011

Percentage of Specific Population

Graduating Class

	2001	2006	2010	2011
●	N/A	1,836	2,782	3,308
●	N/A	663	1,255	1,460

At time of press, the numbers of low-income students for each graduating class and for low-income exam-takers prior to the class of 2006 were not available.

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Black/African American

Figure 5
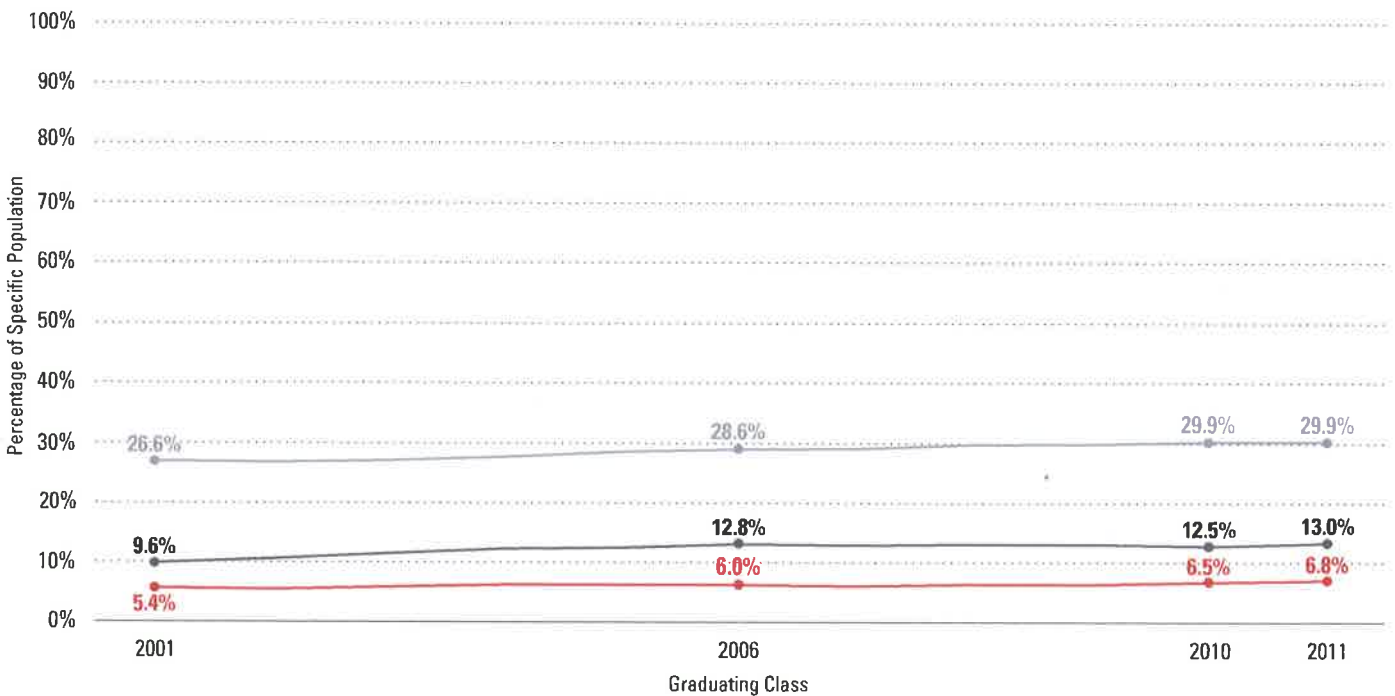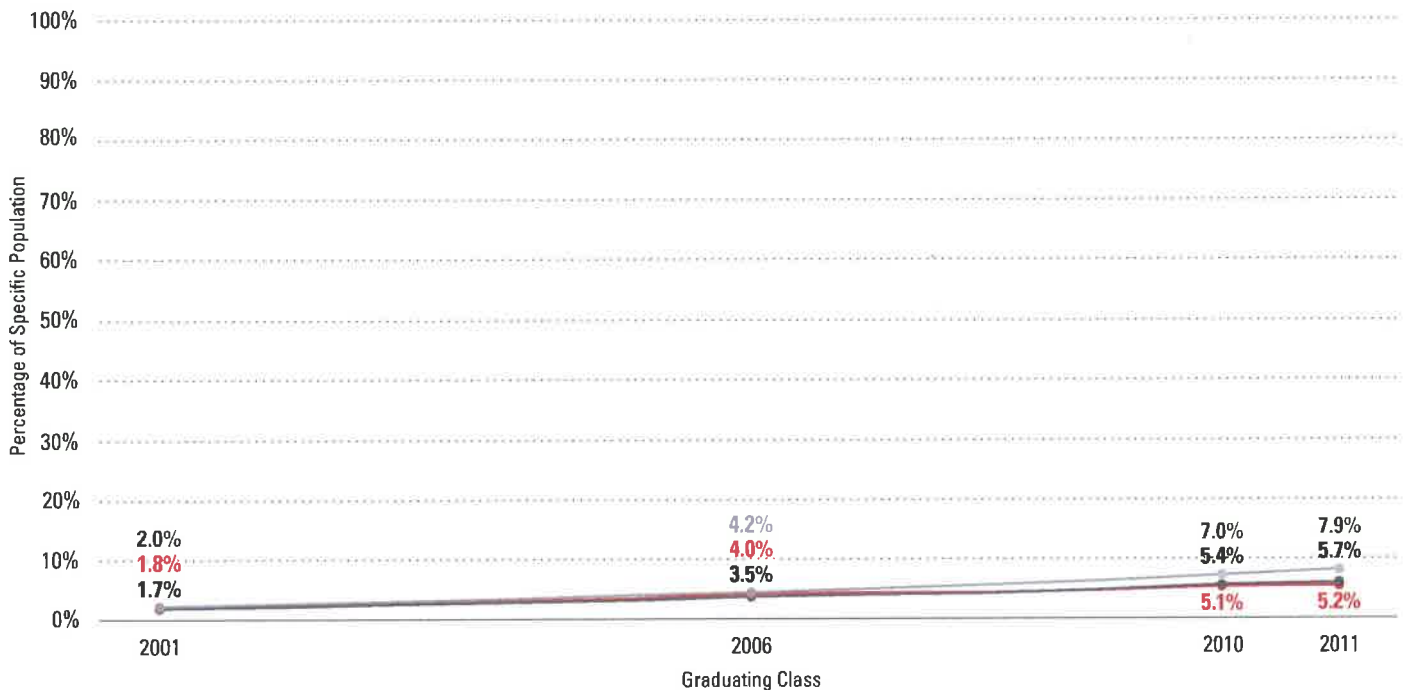## Trends in AP Exam participation and success

The percentage or number of ...

- students in the graduating class
- graduates leaving high school having taken an AP Exam
- graduates scoring 3+ on an AP Exam at any point in high school

... who are black/African American

3,328

black/African
American graduates
in the class of 2011
took an AP Exam
during high school

	2001	2006	2010	2011
●	16,810	22,285	25,633	25,215
●	1,263	2,716	3,071	3,328
●	429	737	969	1,055

CollegeBoard

Hispanic/Latino

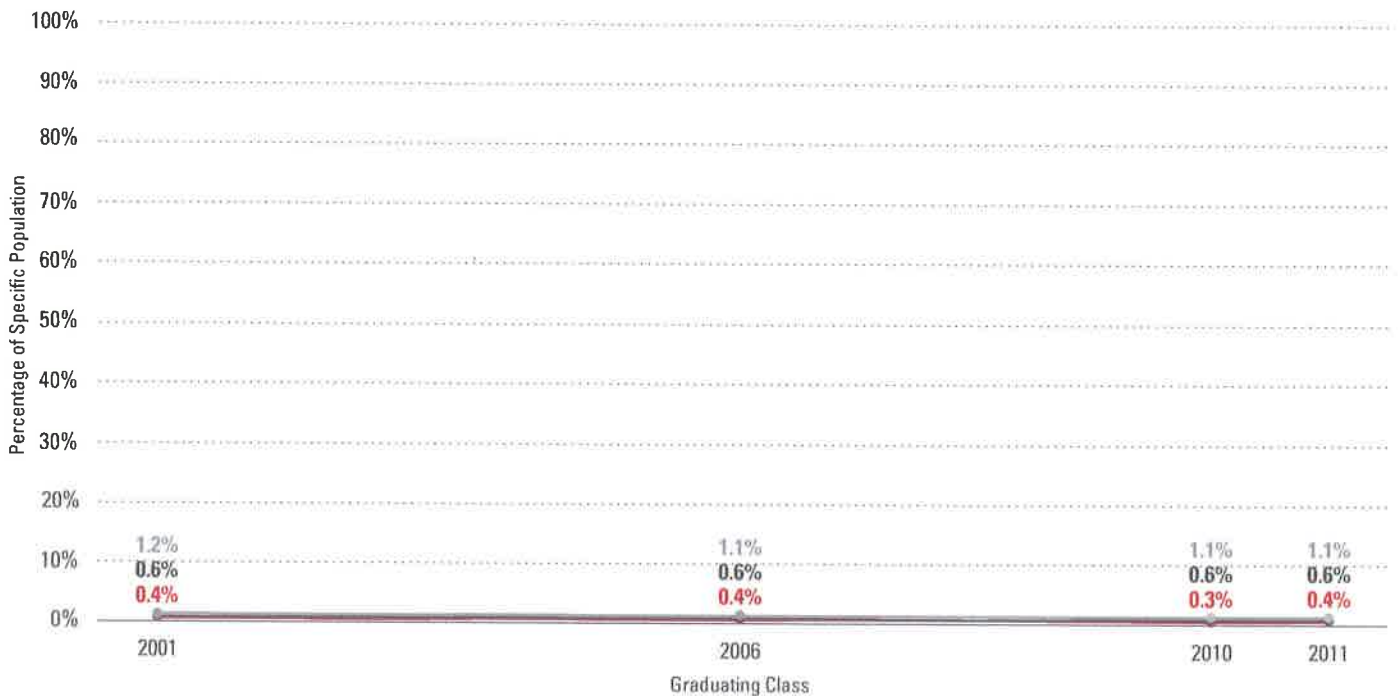Figure 6

Trends in AP Exam participation and success

The percentage or number of ...

- students in the graduating class
- graduates leaving high school having taken an AP Exam
- graduates scoring 3+ on an AP Exam at any point in high school

... who are Hispanic/Latino

1,455
Hispanic/Latino graduates in the class of 2011 took an AP Exam during high school

	2001	2006	2010	2011
●	1,264	3,310	5,962	6,693
●	225	739	1,319	1,455
●	140	496	765	801

CollegeBoard

American Indian/ Alaska Native

Figure 7
Trends in AP Exam participation and success

The percentage or number of ...

- students in the graduating class
- graduates leaving high school having taken an AP Exam
- graduates scoring 3+ on an AP Exam at any point in high school

... who are American Indian/Alaska Native

151

American Indian/ Alaska Native graduates in the class of 2011 took an AP Exam during high school

	2001	2006	2010	2011
●	761	852	968	927
●	83	119	159	151
●	34	45	49	62

Asian/Asian American/ Pacific Islander

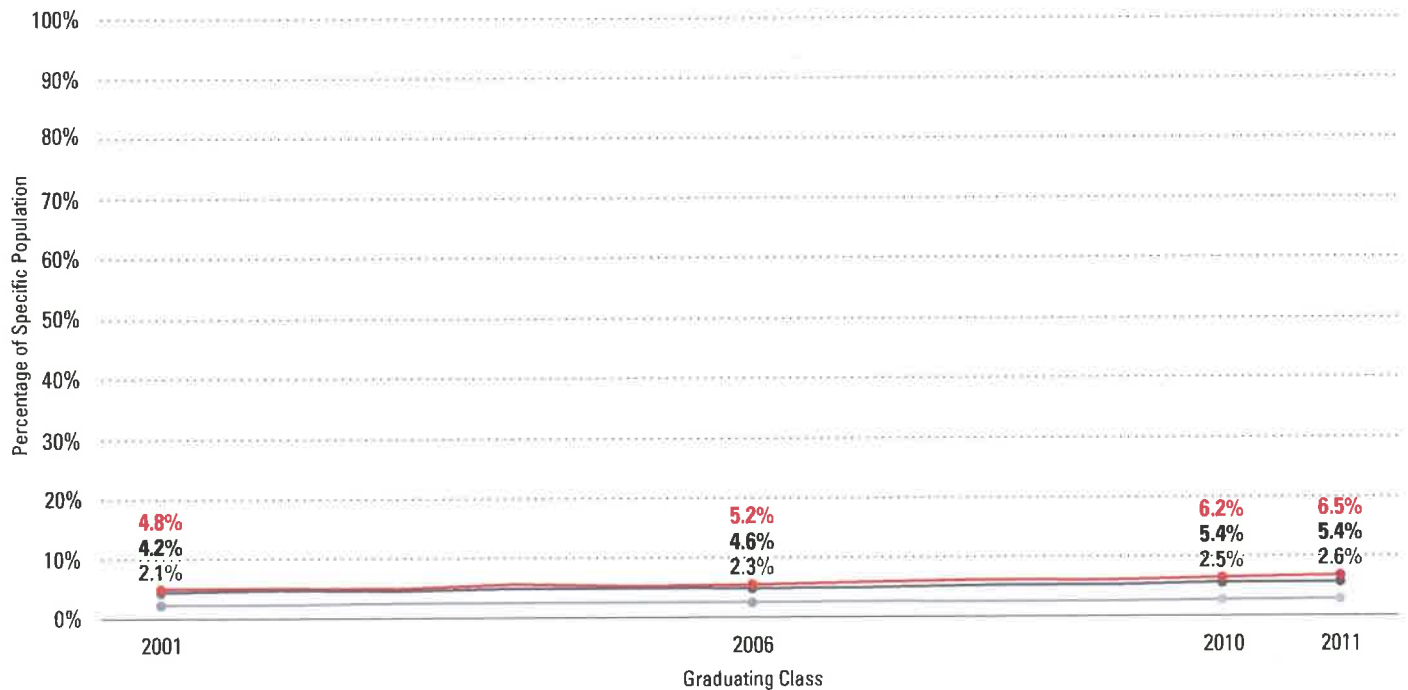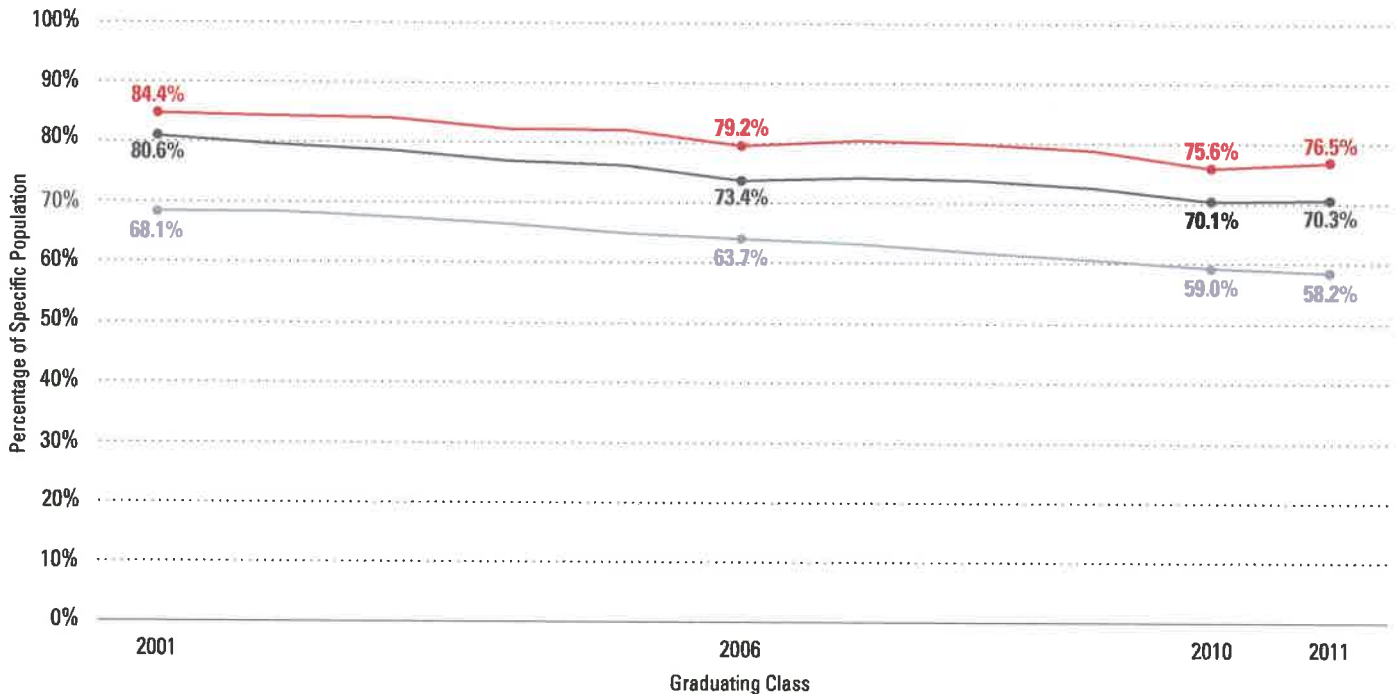Figure 8
Trends in AP Exam participation and success

The percentage or number of ...

- students in the graduating class
- graduates leaving high school having taken an AP Exam
- graduates scoring 3+ on an AP Exam at any point in high school

... who are Asian/Asian American/Pacific Islander

1,389
Asian/Asian American/Pacific Islander graduates in the class of 2011 took an AP Exam during high school

Percentage of Specific Population / Graduating Class

	4.8% (2001)	5.2% (2006)	6.2% (2010)	6.5% (2011)
	4.2%	4.6%	5.4%	5.4%
	2.1%	2.3%	2.5%	2.6%

	2001	2006	2010	2011
●	1,334	1,809	2,105	2,181
●	555	967	1,331	1,389
●	378	638	926	1,001

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8

White

Figure 9

Trends in AP Exam participation and success

The percentage or number of ...

- students in the graduating class
- graduates leaving high school having taken an AP Exam
- graduates scoring 3+ on an AP Exam at any point in high school

... who are white

17,949

white graduates in the class of 2011 took an AP Exam during high school

Y-axis: Percentage of Specific Population

Red line (graduates scoring 3+): 84.4% (2001), 79.2% (2006), 75.6% (2010), 76.5% (2011)

Dark line (graduates leaving high school having taken an AP Exam): 80.6% (2001), 73.4% (2006), 70.1% (2010), 70.3% (2011)

Gray line (students in the graduating class): 68.1% (2001), 63.7% (2006), 59.0% (2010), 58.2% (2011)

X-axis: Graduating Class — 2001, 2006, 2010, 2011

	2001	2006	2010	2011
○	43,119	49,678	50,529	49,102
●	10,612	15,509	17,209	17,949
●	6,707	9,740	11,339	11,861

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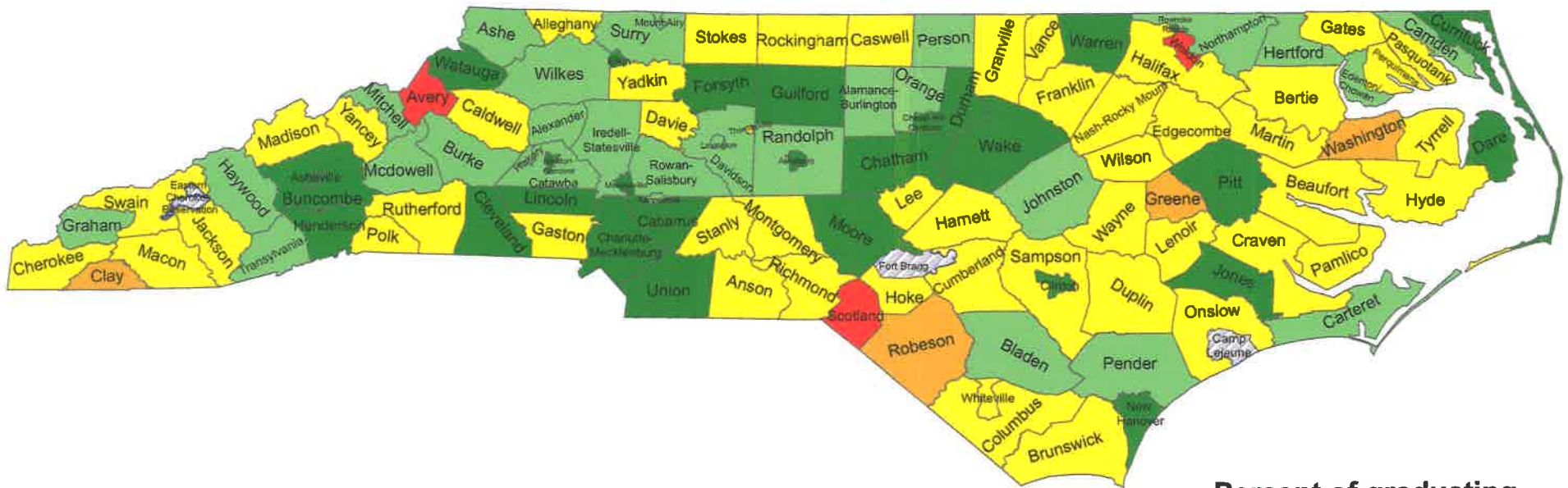**CollegeBoard**

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 of more than 5,900 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 www.collegeboard.org.

North Carolina Public Schools

AP® Participation by District: High School Class of 2011

Percent of graduating class participating in AP during high school

- 🟥 Less than 1%
- 🟧 1%–9%
- 🟨 10%–19%
- 🟩 20%–29%
- 🟩 30% or greater
- ▨ No 12th–grade enrollment

Sources: 2009–2010 NCES 12th–grade district enrollment, 2011 College Board AP Cohort Data, and 2009–2010 Proximity School District Boundary Files.
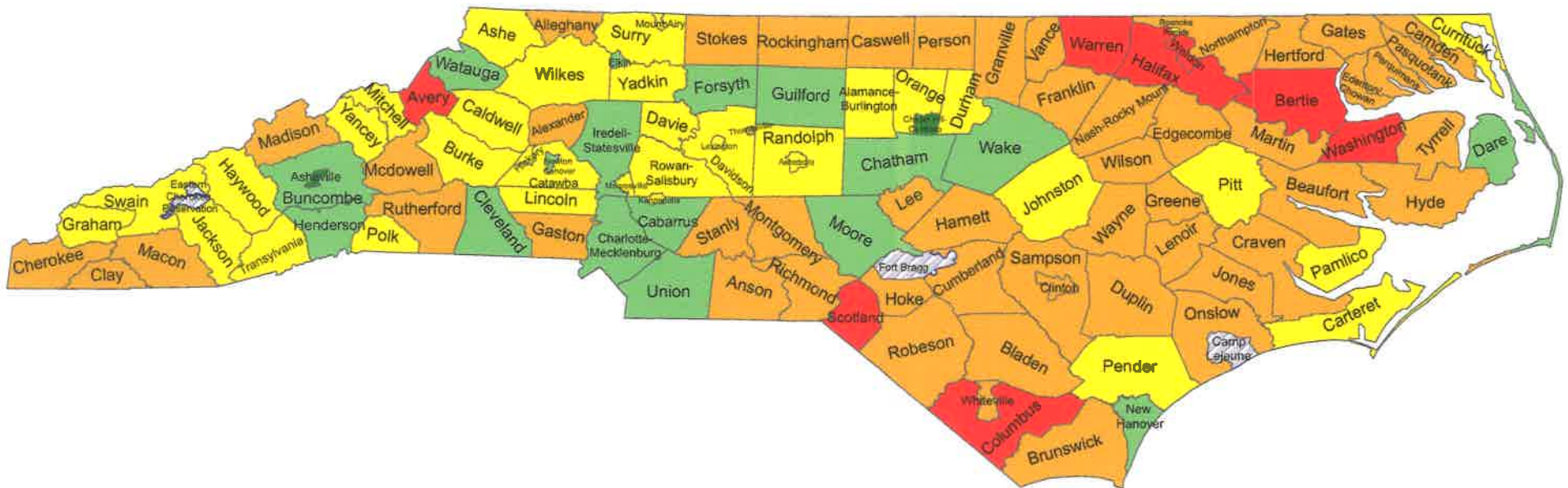
Notes: The most recent enrollment data available was for the 2009–2010 school year. A degree of caution should be exercised when reviewing participation estimates as data may not reflect district enrollments for the 2010–2011 school year. AP Cohort data represents public school students from a given graduating class who took an AP Exam during high school.

North Carolina Public Schools

AP® Performance by District: High School Class of 2011

Sources: 2009–2010 NCES 12th–grade district enrollment, 2011 College Board AP Cohort Data, and 2009–2010 Proximity School District Boundary Files.

Notes: The most recent enrollment data available was for the 2009–2010 school year. A degree of caution should be exercised when reviewing performance estimates as data may not reflect district enrollments for the 2010–2011 school year. AP Cohort data represents public school students from a given graduating class who scored 3 or higher on an AP Exam during high school.

Percent of graduating class earning a 3 or higher on at least one AP exam during high school

- Less than 1%
- 1%–9%
- 10%–19%
- 20%–29%
- 30% or greater
- No 12th–grade enrollment