

October 2008

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## Commentary

### Math Works

Achieve's research with employers and the postsecondary community makes clear that to be college- and career-ready all high school graduates need four years of high school mathematics, including the knowledge and skills typically acquired in Algebra II. And it's not just Achieve's research that shows the importance of a rigorous mathematics education for all high school graduates; there is plenty of evidence from a variety of sources that all high school graduates, no matter what their post-secondary plans are, benefit from a rigorous mathematics curriculum.

While the research is there, it has not been compiled and made accessible to the variety of stakeholders involved in conversations about standards. Given the importance of these issues to the ADP agenda, Achieve has attempted to do just that in a toolkit entitled "Math Works."

The Math Works materials include *fact sheets* focusing on frequently asked questions and a broader *policy paper* that synthesizes the current research base on why math is so important to all students as well as the U.S. economy. *Power point presentations* and *resource information* are also available as part of the toolkit.

Another notable component of the toolkit is a series of brochures that show how advanced math skills are used in a variety of jobs. The *Mathematics at Work Brochures* present case studies drawn from leading industries nationwide, such as information technology, advanced manufacturing and healthcare. They provide concrete examples of how advanced math is applied in these jobs and identify the prerequisite mathematical skills needed to successfully enter these jobs. In healthcare, for example, radiographers rely on geometry, spatial relations, measurement, inverse laws and problem solving to produce CT images that will allow radiologists to properly diagnosis injury and illness. Importantly, all of the jobs highlighted in the brochures are accessible to high school graduates without a four-year college degree.

Across the country, skepticism remains about the need for all students to take advanced mathematics in high school. People still fail to understand - and in

some cases just don't believe - that advanced mathematics is actually used in the workplace, particularly in jobs that do not require a bachelor's or more advanced degree. In some cases, the skepticism derives from people's limited understanding of how the workplace has changed from when they first entered it. The dramatic changes in manufacturing in the last half-century are a good example of an industry where the infusion of technology has increased the value of "brains" over "brawn." Jobs that didn't require advanced math before frequently do today.

In other cases, the cynicism is rooted in what appears to be a uniquely American phenomenon: it is acceptable not to be "good" at math ("I can't even balance my checkbook") in a way that we would find unacceptable in literacy and writing. Other cultures expect that everyone can succeed at math if they persevere - and international assessments show that this core belief pays dividends in performance of students and later in job creation and innovation. Mathematics is the foundation for higher order thinking, is key to accessing and completing postsecondary education, and leads to better workplace preparation. This is why advanced mathematics is fundamentally important for ALL students.

The Math Works toolkit will help state leaders respond to this skepticism, and we will update the materials regularly to reflect the latest research and examples. You can access the toolkit via Achieve's Web site; hard copies of the materials are also available upon request. [More](#).

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## **New from Achieve**

### **Illinois Joins ADP Network**

Illinois Governor Rod R. Blagojevich, along with the Illinois State Board of Education, announced that Illinois has joined the [American Diploma Project \(ADP\) Network](#) to better position itself to prepare students for college and the workforce. "Illinois businesses are not only competing against companies in other states, but in other nations as well. We have to look globally at what students need to know in order to be successful after they graduate," said Governor Blagojevich. "We need to challenge our students every day so they can meet the challenges that wait for them after high school." Illinois is the 34th state in the ADP Network. Together, Network member states are responsible for educating nearly 85 percent of all U.S. public school students. Read the [press release](#).

### **ADP Network Team Meeting Highlights**

Achieve hosted the third annual American Diploma Project (ADP) Network Leadership Team Meeting in Washington, D.C., on September 11-12. Thirty-one ADP Network states sent teams including K-12 and postsecondary leaders, members of the business community, governors' advisors, and members of state boards of education. The goal of the meeting was to give state leaders a significant opportunity to discuss key challenges with moving the college- and career-ready policy agenda forward. Participants had time to hear from experts, learn from colleagues in other states, and meet in state teams to plan next steps

in their ongoing efforts to advance the ADP policy in their states.

Highlights of the meeting, which are available on Achieve's Web site, include a keynote address given by Craig Barrett, Chairman of the Board, Intel Corporation, and co-chair of Achieve's board. Mr. Barrett's remarks focused on the urgency with which the United States needs to address the challenge of preparing students for a globally competitive world. Another keynote address was given by Sir Michael Barber, Expert Partner, Global Public Sector Practice, McKinsey & Company. Prior to joining McKinsey, Sir Barber was (from 2001-05) Chief Adviser on Delivery to British Prime Minister Tony Blair. He shared lessons learned from his experience implementing complicated policy changes, including Britain's education reforms. While our systems of governance may be different, the challenges are remarkably similar. To view the keynotes and PowerPoints that accompanied presentations, go [here](#).

### **Aspen Institute Education Summit**

On Monday, September 15th in Washington, D.C., the Aspen Institute hosted over 300 national leaders to discuss education reform. With the growing interest in international benchmarking of our education system, the speech by Sir Michael Barber at the summit is particularly worth reading. It provides a meaningful perspective on the past, present and future of education reform in the U.S. from a knowledgeable observer from "across the pond." Further, it is a valuable reminder of the moral and social justice dimensions of education reform. Highlights of the summit, including a transcript of the speech are available [here](#).

### **Common Core Standards from the Ground Up**

Achieve released a report showing that individual state efforts to set college- and career-ready standards for high school graduates have actually led to a remarkable degree of consistency in English and mathematics requirements among the states. This "common core" is detailed in "Out of Many, One: Toward Rigorous Common Core Standards from the Ground Up." The report tracks the voluntary standard-setting efforts in 16 early-adopter states, including Arizona, Arkansas, Georgia, Indiana, Kentucky, Louisiana, Maryland, Michigan, Minnesota, New Jersey, New Mexico, Ohio, Oklahoma, Rhode Island, Tennessee and Texas. Together, these states educate 38 percent of U.S. public school students. All of the states discussed in the report are members of Achieve's ADP Network. To download the report, go [here](#).

### **College & Career-Ready Policy Institute**

In September Achieve, the Data Quality Campaign, EducationCounsel, Jobs for the Future and the National Governors Association Center for Best Practices announced an unprecedented partnership to provide guidance, advice and support to states through the "College & Career-Ready Policy Institute." The eight Institute states, all participants in Achieve's American Diploma Project Network, are Arizona, Arkansas, Georgia, Louisiana, Minnesota, New Mexico, Ohio and Tennessee. The Institute states were chosen through a competitive selection process based on the states' strong leadership and commitment to a college- and career-readiness agenda as demonstrated by their success in raising academic

standards and graduation requirements for all students.

The Institute is designed to help states put K-12 assessment and accountability systems in place that will ensure that all students graduate from high school college- and career-ready. In addition, the Institute will also assist states in developing strategies for building the capacity of districts and schools so that all students successfully reach higher standards. The support to states by the partners will include multi-state gatherings where state teams will participate in cross-state leadership sessions as well as in-state, customized technical assistance. The Institute is supported by the Bill & Melinda Gates Foundation.

[More...](#)

### **Assessment Partnership Update**

The first administration of the ADP Algebra II End-of-Course Exam was given to nearly 90,000 students this spring across the following states: Arizona, Arkansas, Hawaii, Indiana, Kentucky, Minnesota, New Jersey, North Carolina, Ohio, Pennsylvania, Rhode Island and Washington. This exam is the largest effort a group of states has ever undertaken to develop a common assessment based on common standards. Fourteen ADP Network states are a part of the Algebra II consortium; all ADP states all welcome to join.

In August, Achieve released a cross-state report on the results of the first administration. The twelve states that participated in the first exam did so in a variety of ways. A few states had all students enrolled in Algebra II take the exam while other states piloted the exam with smaller numbers of students. All of the states are still determining how the exam and the Algebra II course will ultimately fit into their high school assessment and accountability systems. Consequently, this year's participation rates in Algebra II courses and in the ADP End-of-Course Exam varied from state to state and comparisons of state results were not yet meaningful nor appropriate. The results of the first exam do demonstrate, however, the significant amount of work that needs to be done to ensure that all students graduate from high school ready for postsecondary mathematics. [Download the report.](#)

The ADP Algebra II End-of-Course Exam will be administered twice in the 2008-09 school year: first, at the end of the fall semester and, then, at the end of the spring semester. Although a set of 10 released items is already available, an additional 30 items, including information for teachers and students on what to expect on this exam, will be released later this fall. A fact sheet that answers frequently asked questions is available, including information on the core test content and how states can become members of the consortium. [More...](#)

A subset of the ADP Algebra II Consortium states are participating in a common Algebra I End-of-Course Exam. The Algebra I Exam Content Standards will be finalized this fall. This exam has been developed so that it aligns with and supports the purposes of the Algebra II End-of-Course Exam. A field test will be administered soon, and the first operational exam will be in spring 2009.

**[NGA, CCSSO and Achieve Join Together to Promote International](#)**

## Benchmarking of U.S. Education Performance

The National Governors Association (NGA), Council of Chief State School Officers (CCSSO) and Achieve have joined together to ensure students in every state are receiving a world-class education by providing states a roadmap for benchmarking their K-12 education systems to those of top-performing nations.

The organizations' work will be guided by an International Benchmarking Advisory Group consisting of international education experts, business leaders, researchers, former federal officials and current state and local officials. The Advisory Group's expertise and experience will provide guidance for benchmarking state education system practices in areas such as standards, accountability, assessments and the educator workforce. The Advisory Group is co-chaired by Arizona Gov. Janet Napolitano, Georgia Gov. Sonny Perdue and Craig Barrett, Chairman of the Board, Intel Corporation.

"The United States needs workers whose knowledge, skills and talents are competitive with the best in the world. This international benchmarking effort will ensure that we are moving in that direction," said Barrett. "All our students need the critical thinking and problem solving skills to handle the complex challenges of the 21st century if the U.S. is going to maintain its competitive edge."

The partner organizations will release a report about this critical issue and offer steps to take that will ensure state education systems exceed the best in the world. [More...](#)

## America's Promise and Achieve Dropout Prevention Fact Sheet

America's Promise is holding over 100 dropout prevention summits in states and cities across the country over the next year and a half. Achieve and America's Promise have created a joint fact sheet that will be used at all of the upcoming summits to make the case for increasing the number of high school graduates who receive a high school diploma that is meaningful for college, career and life. The document, as well as more information about dropout prevention and the ADP agenda, can be found [here](#).

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## Washington State Revises Graduation Requirements

In July the Washington State Board of Education (SBE) approved the state superintendent's adoption of revised state mathematics standards for students in ninth through twelfth grades. The state also adopted a set of college- and career-ready graduation requirements, called the "Core 24," to be phased in over the next eight years. The new requirements include

### News Clips

1. **A Reporter Goes Back to Algebra Class**

A *Washington Post* reporter is retaking high school algebra and documents the lessons learned in an [article](#)

an extra credit of English, raising the total to four; an extra credit each in math - including an Algebra II or equivalent course - and science, raising the requirement from two to three courses in each subject; and another half-credit of social studies, for a total of three credits.

"We've responded to feedback on the competencies our students need for success from a wide variety of sources, by developing standards that are among the best in the nation and the world," said SBE executive director Edie Harding. "This is another important step toward ensuring that Washington students are well-prepared for any path they choose."

Washington's graduation credit requirements were last changed in 1985. The revised high school graduation requirements are intended to better prepare students for life after high school - in gainful employment, postsecondary education and citizenship. Washington is the 20th state that has raised graduation requirements to the college- and career-ready level over the past several years. (See a state comparison [chart](#).) [More...](#)

and a [blog](#).

## 2. **New Jersey Aims to Prepare Students for College and Careers**

New Jersey Governor Jon S. Corzine proposed new graduation requirements, including more rigorous standards in science, math and language. The upgrades would include classes in advanced algebra and geometry. [More...](#)

## 3. **College Panel Calls for Less Focus on Standardized Test Scores**

A commission convened by the National Association for College Admission Counseling recommends that colleges and universities move away from their reliance on SAT and ACT scores and shift toward admissions exams more closely tied to the high school curriculum and achievement. [More...](#)

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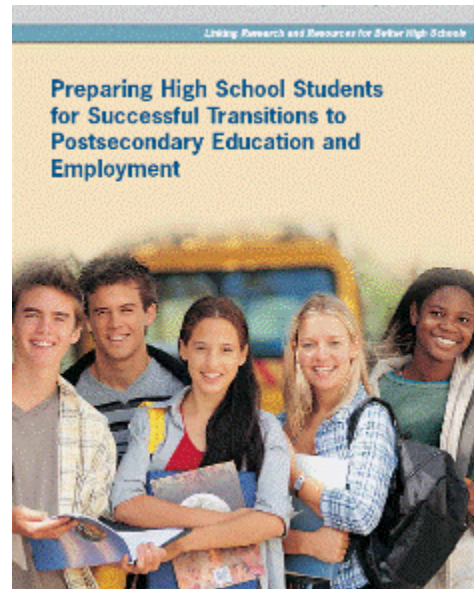
## **New Resources**

- States are on track to publicly report their high school graduation rates using a common formula by 2012, according to a report from the National Governors Association Center for Best Practices. "Implementing Graduation Counts: State Progress to Date, 2008" documents states' progress updating their data systems in order to report

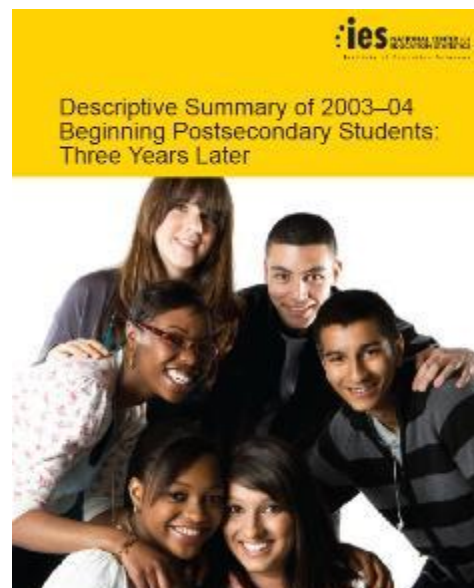


their high school graduation rate using a common NGA formula. According to the report, 16 states currently use the NGA Compact formula to calculate their high school graduation rate and another five states plan to use the formula later in 2008. Thirty-six states now have the information systems they need to collect longitudinal data and are tracking cohorts of students as they progress through the school system. Within four years, every state committed to the NGA Compact should have high school cohort data that will allow them to report their graduation rate using the same formula. [More...](#)

- The National High School Center released "Preparing High School Students for Successful Transitions to Postsecondary Education and Employment." This issue brief highlights lessons from policies and programs designed to improve students' preparation for life after high school. It includes state recommendations that reinforce the ADP agenda, including aligning high school curricula, graduation standards, and assessments with the expectations of postsecondary education institutions and employers; holding high schools accountable for increasing the percentage of graduates who complete a curriculum that prepares them for postsecondary education and today's information-based workforce demands; creating governance mechanisms and financial incentives to align K-12 and postsecondary planning and budgets; providing feedback to high schools by creating a system for tracking students across the K-12 and postsecondary education systems and into the workplace; and developing financial aid policies that provide incentives to complete postsecondary education. [More...](#)

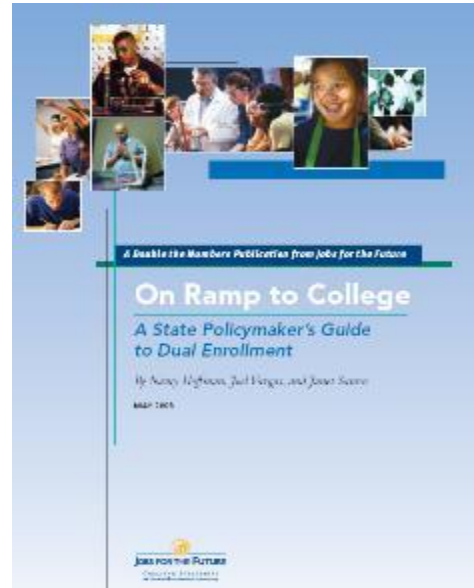


- The National Center for Education Statistics of the Institute of Education Sciences released "Descriptive Summary of 2003-04 Beginning Postsecondary Students: Three Years Later." This report describes the characteristics and enrollment patterns of a nationally representative

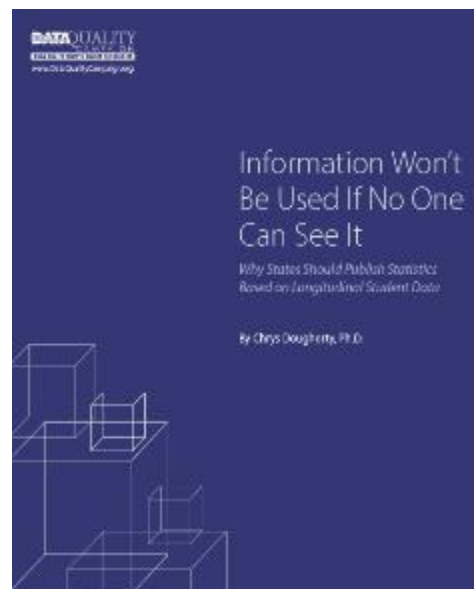


sample of students who began postsecondary education for the first time during the 2003-04 academic year. It provides information about rates of persistence, program completion, transfer and attrition. [More...](#)

- Dual enrollment is no longer just for gifted and talented high school students hoping to get a head start on college, according to a new report by Jobs for the Future entitled "On Ramp to College: A State Policymaker's Guide to Dual Enrollment." The report reviews trends in a growing number of states that see dual enrollment as a way to expand college opportunity - particularly for students who might not traditionally be considered college-bound. It highlights examples of successful state-wide dual enrollment efforts and provides a step-by-step plan for policymakers to create successful programs and policies. [More...](#)



- In a report entitled, "Information Won't Be Used If No One Can See It: Why States Should Publish Statistics Based on Longitudinal Student Data," the Data Quality Campaign points out that the value of comprehensive longitudinal data systems depends on how often and how well the information is used. By publishing a well-chosen set of longitudinal statistics, states can put their statewide data systems to work providing important information to educators and policymakers. [More...](#)





- The Thomas B. Fordham Institute published "Education Olympics 2008: The Games in Review." Presenting results from international assessments, this report shows how the U.S. has performed internationally in education in recent years and offers a glimpse of how education looks in top-performing nations. [More...](#)
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