U.S. DEPARTMENT OF EDUCATION

Answering the Challenge of a Changing World

Strengthening Education for the 21st Century

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U.S. Department of Education

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Margaret Spellings
Secretary

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We need to encourage children to take more math and science, and to make sure those courses are rigorous enough to compete with other nations. ... If we ensure that America's children succeed in life, they will ensure that America succeeds in the world.

—President George W. Bush

High school reform is not just an "education issue." It's also an economic issue, a civic issue, a social issue and a national security issue. And it's everybody's issue.

—U.S. Secretary of Education Margaret Spellings

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Strengthening Education for the 21st Century

Introduction

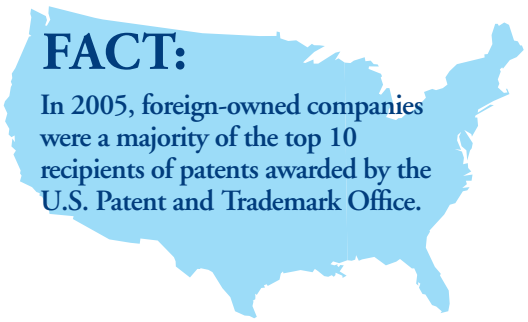
The Challenge: To Innovate Education

America has long been innovation's home. It's in our very DNA, born from a desire to be free that was ahead of its time. When faced with a challenge, we invent the answer: from the first telephone to global satellite communications; from the first computer to the World Wide Web; from the Wright Brothers to Neil Armstrong. To Americans, innovation means much more than the latest gadget. It means creating a more productive, prosperous, mobile and healthy society. Innovation fuels our way of life and improves our quality of life. And its wellspring is education.

> *Our greatest advantage in the world has always been our educated, hard-working, ambitious people—and we're going to keep that edge.*
> **—President George W. Bush**

President Bush has made innovation and education top priorities. He worked with Congress to pass the most far-reaching education reform in decades, the *No Child Left Behind Act* (*NCLB*). The law has brought high standards and accountability to public schools and sparked a mathematics and reading revival in the early grades. The president has also increased funding for innovative and intensive reading programs such as Reading First by more than 200 percent since 2001, benefiting more than a million students.

The rest of the world, meanwhile, has not stood still. America no longer holds the sole patent on innovation. Inspired by our example, countries such as China, India and South Korea have invested heavily in education, technology and R & D. Billions of new competitors are challenging America's economic leadership. Our educational leadership has been challenged as well, with students from many developed nations outperforming ours in international tests, particularly in math and science. These test scores are linked to a lack of challenging course work, an ominous sign for many American schools. The impact may be felt well into the future: According to some estimates, America's share of the world's science and engineering doctorates is predicted to fall to 15 percent by 2010.



This global challenge calls for bold action and leadership. America has done it before. Following the Soviet Union's 1957 launch of Sputnik, the world's first satellite, Congress passed and President Eisenhower signed into law the *National Defense Education Act of 1958*. The law accelerated the study of mathematics and science and helped improve foreign language teaching in our schools. It brought together the public and private sectors behind the effort. And it worked.

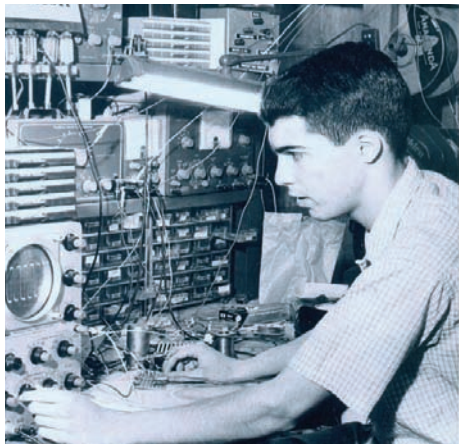
The Congress hereby finds and declares that the security of the Nation requires the fullest development of the mental resources and technical skills of its young men and women.
—National Defense Education Act of 1958

Within a decade, the number of science and engineering doctorates awarded in the U.S. annually had tripled, accounting for more than half the world's total by 1970.

Today, America faces not a streaking satellite but a rapidly changing global workforce. The spread of freedom is spurring technological innovation and global competition at a pace never before seen. We have to run to keep up. A high school diploma, once desirable, is now essential—and, increasingly, insufficient. About 90 percent of the fastest-growing jobs of the future will require some postsecondary education. It is therefore unacceptable that among all ninth-graders, approximately three in 10 do not graduate on time, or that for black and Hispanic students the figure is about five in 10.

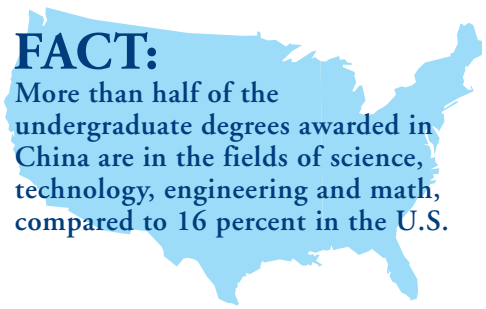
Whether filling blue-collar or white-collar positions, employers now seek workers with "pocket protector" skills—practical problem-solvers fluent in today's technology. If current trends continue, by 2012 over 40 percent of factory jobs will require postsecondary education, according to the National Association of Manufacturers. And yet, almost half of our 17-year-olds do not have the basic understanding of math needed to qualify for a production associate's job at a modern auto plant.

U.S. manufacturing will no longer employ millions in low-skilled jobs. Tomorrow's jobs will go to those with education in science, engineering, and mathematics and to high-skill technical workers. Such a workforce is an important key to future growth, productivity, and competitiveness.
—National Association of Manufacturers, *The Looming Workforce Crisis*, 2005



Innovating and improving education is critical not only to America's financial security but also to our national security. Today, not one but 3,000 satellites circle the earth. U.S. soldiers use the latest technology and communications to fight the global war on terrorism. Advanced math skills are used to identify and undermine terrorist networks. Government and the private sector look to engineer new ways to protect lives and infrastructure from harm. And the effort to spread freedom to other nations and cultures demands speakers fluent in languages such as Arabic, Farsi, Chinese and Russian. Addressing these challenges will advance opportunity and entrepreneurship at home and promote democracy and understanding abroad.

Rigorous instruction, high standards and accountability for results are helping to raise achievement in the early grades. Now America must complete the task. With our students working to achieve grade-level proficiency in math and reading by 2014, as called for by *NCLB*, innovative education reform is needed. America's civic, political and business leaders agree: To sustain our quality of life and way of life, we must act now. And President Bush is leading the charge.



The Answer:
President Bush's 2006 Education Agenda

President Bush's answer to America's newest challenge begins with the **American Competitiveness Initiative**. The American Competitiveness Initiative will commit $380 million in education funding and $5.9 billion overall in FY 2007—and more than $136 billion over the next 10 years—to strengthen education, promote research and development and encourage entrepreneurship. The initiative will bring together leaders from the public sector, private sector and education community to better prepare our students for the 21st century. It will place a greater emphasis on math instruction from the earliest grade levels. It will ensure that high schools offer more rigorous course work, including Advanced Placement and International Baccalaureate programs in math, science and critical-need foreign languages. It will inform teachers of the most effective, research-based approaches to teaching math and science. It will encourage professionals in those fields to become teachers themselves. And it will coordinate federal math and science education programs to ensure the most effective use of the taxpayers' dollars.

The first bulwark in the face of rapidly changing economies and job markets is the flexibility and adaptability of the labor force. This adaptability begins with the formal educational system, especially the public schools.
—Ben Bernanke, Federal Reserve Board chairman

The president's **High School Reform Initiative** ($1.475 billion in FY 2007) will help ensure that a diploma becomes a ticket to success for all graduates, whether they enter the workforce or go on to higher education. It will bring high standards and accountability to high schools by aligning their

academic goals and performance with the *No Child Left Behind Act*. Through assessments and targeted interventions, the initiative will help educators raise achievement levels and close the achievement gap. It will also help alleviate the dropout problem by focusing more attention on at-risk students struggling to reach grade level in reading or math.

The inadequacies of our systems of research and education pose a greater threat to U.S. national security over the next quarter-century than any potential conventional war that we might imagine.
— U.S. Commission on National Security/21st Century (Hart-Rudman Commission), 2001

Finally, the president's **National Security Language Initiative** ($57 million in FY 2007), announced on Jan. 5, 2006, will help more American students master critical-need foreign languages to advance global competitiveness and national security. This joint project, in collaboration with the Department of State, Department of Defense and the Office of the Director of National Intelligence, will train teachers and assist students in those fields.

The Challenge: Knowledge of Math and Science

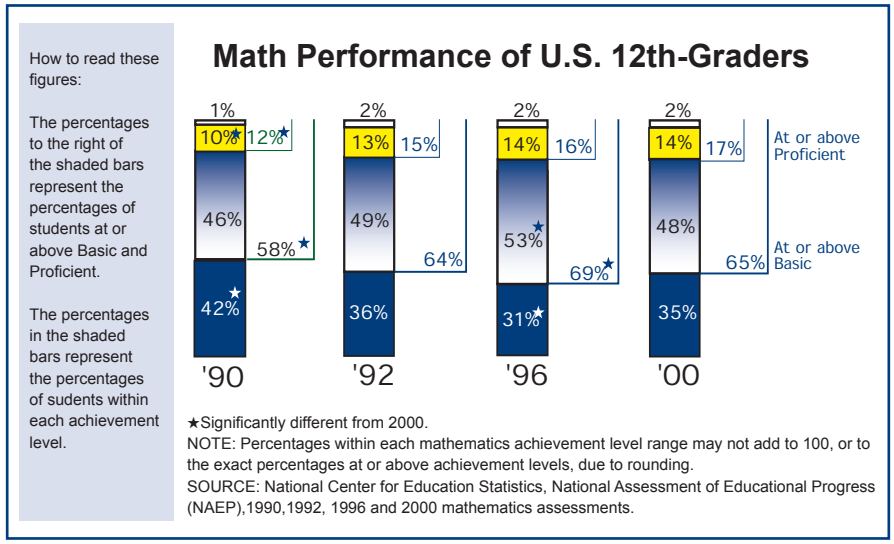
In this changing world, knowledge of math and science is paramount. "It's a magnificent time to know math," writes *Businessweek*, in an article entitled "Math Will Rock Your World." So-called "math entrepreneurs" are translating the world into numbers—which translates into big salaries. According to the Bureau of Labor Statistics, job openings requiring science, engineering or technical training will increase by more than 24 percent, to 6.3 million, by 2014.

We must improve the way we teach math in our elementary schools. It's not just about helping younger students develop strong arithmetic skills; it's about planting the seeds of higher-order thinking for later in life.
—Secretary Margaret Spellings

Of all of the recommendations contained in the National Academies' report *Rising Above the Gathering Storm*, the highest priority is to vastly improve K–12 math and science education. Schools must help students develop the skills they will need to compete and succeed in higher education and the workforce, which are increasingly connected in this changed world. They must develop a pool of technically adept and numerically literate Americans to ensure a continual supply of highly trained mathematicians, scientists and engineers.

FACT:
Just 7 percent of America's fourth- and eighth-graders achieved the "advanced" level on the most recent *Trends in International Mathematics and Science Study* (TIMSS, 2003) test. In Singapore, 38 percent of fourth-graders and 44 percent of eighth-graders did.

We clearly have a long way to go. High school test scores in math have barely budged since the early 1970s. The percentage of seniors scoring below "basic" level on the National Assessment of Educational Progress assessments actually rose between 1996 and 2000 (see chart below). And less than half of high school graduates in 2005 were ready for college-level math and science course work, according to ACT.



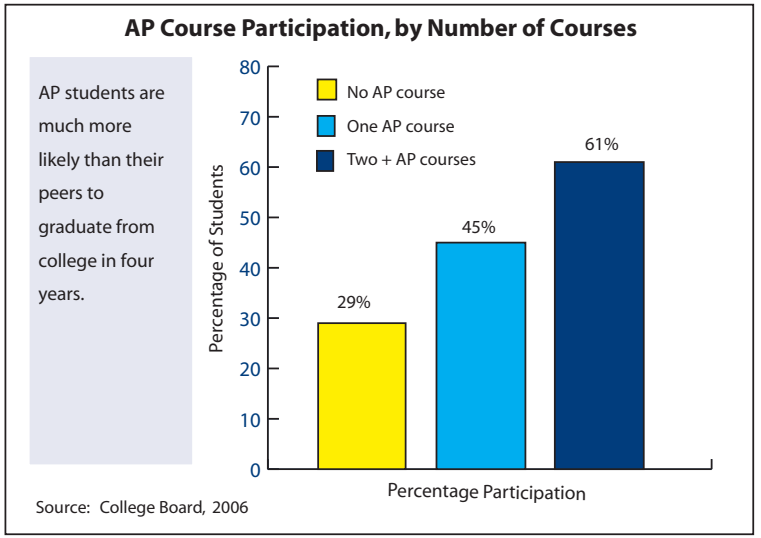
In 1983, the landmark *A Nation at Risk* report recommended that high school students be required to take a minimum of three years of math and three years of science to graduate. Yet today, only 22 states and the District of Columbia require at least this amount to graduate in the class of 2006. Even fewer require high school exit exams (which are often administered in 10th or 11th grade, leading many employers and universities to discount the results). Just one state—Alabama—calls for current students to take four years of both science and math to graduate.

The result is that as America's students grow older, the rest of the world catches up with them. Our 15-year-olds ranked 24th out of 29 developed nations in mathematics literacy and problem-solving, according to the 2003 Programme for International Student Assessment (PISA) test. The U.S. had a smaller percentage of top performers and a larger percentage of low performers than the average of all developed countries.

To succeed in [this] marketplace, U.S. firms need employees who are flexible, knowledgeable, and scientifically and mathematically literate.
—Norman Augustine, former chairman and CEO, Lockheed Martin; Chair, Committee on Prospering in the Global Economy of the 21st Century

A major part of the answer is teacher training. Three out of four fourth-grade math and science teachers in the U.S. do not have a specialization in those subjects. And students from low-income communities are far less likely to have teachers certified in the subject they teach. Shadowing it all, two-thirds of our math and science teachers are expected to retire by 2010, according to the National Commission on Mathematics and Science Teaching for the 21st Century. But talented teachers are always in great demand.

In this changing world, providing greater access to Advanced Placement courses is a must. AP courses benefit not only the students who take them but also the schools that offer them, whose curricula are upgraded and improved as a result. Students who take advanced math courses such as trigonometry, precalculus and calculus in high school are far more likely to earn a bachelor's degree in college. AP calculus students ranked first in the world on the Trends in International Mathematics and Science Study (TIMSS) test; U.S. students overall ranked second to last.



Some progress has been made. Since 2000, the percentage of students who have taken and passed Advanced Placement courses has risen in all 50 states and the District of Columbia, according to the College Board. Even so, more than one-third of high schools—many serving predominantly low-income and minority students—still do not offer any AP courses. Based on PSAT scores, there were nearly a half million students in America ready for AP calculus last year who didn't take it or have access to it.

While many students eagerly await this opportunity, others still harbor negative views toward math and science. Old attitudes die hard. A recent survey commissioned by the Raytheon Company found that 84 percent of middle school students would rather clean their rooms, take out the garbage or go to the dentist than do their math homework. According to the Business Roundtable, just 5 percent of parents say they would "try to persuade their child toward careers in science, technology, mathematics or engineering." Many people still view math and science as "nerdy" subjects with little relevance to the "real world." Like it or not, that world has changed forever.

In China today, Bill Gates is Britney Spears. In America today, Britney Spears is Britney Spears – and that is our problem.
— Thomas Friedman, *The World Is Flat*, 2005

The Answer:
American Competitiveness Initiative
$380 Million in FY 2007

President Bush's American Competitiveness Initiative seeks to improve learning and instruction in mathematics and science through the following:

- **National Mathematics Panel** ($10 million): Modeled after the influential National Reading Panel, the National Math Panel would convene experts to empirically evaluate the effectiveness of various approaches to teaching math, creating a research base to improve instructional methods for teachers. It would lay the groundwork for the Math Now program for grades K–7 to prepare every student to take and pass algebra;

- **Math Now for Elementary School Students** ($125 million): Like the successful and popular Reading First program, Math Now for Elementary School Students would promote promising, research-based practices in mathematics instruction and prepare students for more rigorous math course work in middle and high school;

FACT:
Students from low-income families who acquire strong math skills by the eighth grade are 10 times more likely to finish college than peers of the same socioeconomic background who do not.

- **Math Now for Middle School Students** ($125 million): Similar to the current Striving Readers Initiative, Math Now for Middle School Students would diagnose students' deficiencies in math proficiency and provide intensive and systematic instruction to enable them to take and pass algebra;

- **Advanced Placement-International Baccalaureate (AP-IB) Incentive Program** ($122 million—$90 million over 2006 levels): The AP-IB Incentive Program would train 70,000 additional teachers to lead AP-IB math, science and critical-need language courses over the next five years. It would increase the number of students taking AP-IB tests to 1.5 million by 2012, tripling the number of passing test-takers to approximately 700,000 while giving them the opportunity to earn college credit;

> *One of the best standard predictors of academic success at Harvard is performance on Advanced Placement examinations.*
> **—Bill Fitzsimmons, dean of Admissions and Financial Aid, Harvard University**

- **Adjunct Teacher Corps** ($25 million): The Adjunct Teacher Corps would encourage by 2015, 30,000 qualified math and science professionals to share their knowledge as adjunct high school teachers.

- **Evaluating the Effectiveness of Federal Science, Technology, Engineering and Math (STEM) programs** ($5 million): A governmentwide effort would be undertaken to determine which federal education programs are most effective in raising achievement in math and science, which deserve more funding and which should be consolidated to save taxpayer money. The initiative would also align these education programs with the goals and aims of the *No Child Left Behind Act*. Thirteen agencies reported spending $2.8 billion on 207 education programs in FY 2004. About half of the programs dedicated to math and science received less than $1 million in funding, with most targeted to postsecondary education; and

- **Including Science Assessments in *NCLB***: *NCLB* requires every state to develop and administer science assessments once in each of three grade spans by the 2007–08 school year. Including these assessments in the accountability system will ensure students are learning the necessary content and skills to be successful in the 21st-century workforce.

Other Math and Science Initiatives

- **Academic Competitiveness grants** and **SMART Grant Program** ($850 million in FY 2007): Approved by Congress, these two higher education grant programs build on the success of the Pell Grant Program and will benefit more than 500,000 students in need.

  Academic Competitiveness grants will provide increased funds for low-income students who take a rigorous academic curriculum in high school. Grants in the amount of $750 would be awarded to qualified first-year college students who completed a rigorous high school program; grants in the amount of $1,300 would be awarded to second-year students who completed a rigorous program and who earn and maintain a 3.0 average in college.

  SMART grants, in the amount of $4,000, will go to college juniors and seniors studying math, science or critical-need foreign languages who also earn and maintain a 3.0 GPA. This will encourage more students to go into fields that improve America's security and competitiveness.

- **Mathematics and Science Partnerships** ($182 million in FY 2007): This program supports the American Competitiveness Initiative by providing state formula grants to help improve students' academic achievement in rigorous math and science courses. It also assists teachers by integrating proven, research-based teaching methods into the curricula.

- **Expanded Teacher Loan Forgiveness**: This popular program offers up to $17,500 (up from $5,000) in loan forgiveness for highly qualified math, science and special education teachers serving challenging, low-income schools and communities.

The Challenge:
Accelerating Our Schools' Progress

Innovating and improving America's schools will not occur overnight. It took time for eight other developed nations to surpass America's high school graduation rate among adults aged 25 to 34; and it will take time for the U.S. to regain its leadership. We must start by accelerating our progress.

A national problem demands a comprehensive solution. As Secretary Spellings noted, "The competition starts in elementary school." The good news is that educators and policymakers are learning more and more about what works. A half-century ago, the U.S. turned the threat of Soviet competition into proof of our ability to improve our schools and quality of life. Just four years ago, the U.S. turned a growing achievement gap into the bipartisan *No Child Left Behind Act*.

> *Thanks to the* [No Child Left Behind] *law, which requires states to assess children annually and to break down the results by minority group and income level, it has for the first time become possible to track which schools are failing which students. More important, the law also requires states to turn schools around and help them succeed.*
> **— Editorial, *Washington Post*, Feb. 5, 2006**

The law set a course for all students to attain grade-level proficiency in the core subjects of reading and math by 2014. Students in grades 3 through 8 are now learning under high standards. Teachers are using proven instructional methods. Schools are being held accountable for results. Parents have more information and choices. And states have more flexibility to spend federal K–12 education funds, which have increased by 40 percent since 2001.

The early results are in. Across the country, academic achievement has risen significantly in the earliest grades, with math scores at all-time highs, including among African-American and Hispanic students. In the last two years, the number of fourth-graders who learned their fundamental math skills increased by 235,000—enough to fill 500 elementary schools. More reading progress was made among 9-year-olds over the last five years than in the previous 28 years combined. Meanwhile, according to the Nation's

Report Card, the achievement gaps in reading and math between white and African-American 9-year-olds and between white and Hispanic 9-year-olds are at all-time lows. Educators use terms like "amazing," "stunning" and "remarkable" to describe the progress.

> *We've seen the results in my own state of Massachusetts. Student achievement is up across the board in both reading and math. We've made significant progress in educating children with disabilities. We're seeing the results of the* No Child Left Behind *reforms in other parts of the country, too. … Research-based instruction, assessments, and targeted interventions are working.*
> **—Sen. Edward Kennedy (D-Mass.)**

No Child Left Behind has set the goal of every child achieving, but the states and schools themselves have done the heavy lifting to make the law work. For the first time, all 50 states have unique accountability plans in place, with real consequences attached. The results can be seen in schools like Maryland's North Glen Elementary. In 2003, just 57 percent of North Glen's students were proficient in reading, while 46 percent were proficient in math. Those numbers have skyrocketed to 82 percent and 84 percent, respectively. As First Lady Laura Bush said during a recent visit to North Glen, "They've taken advantage of all the aspects of the *No Child Left Behind* law."

Another example is Charles L. Gideons Elementary School in Atlanta. The number of its students meeting Georgia's standards in reading increased by 23 percentage points since 2003. For math the news is even better: a 34 percentage-point improvement during the same period.

A districtwide success occurred in Garden Grove, Calif. Three-fourths of the Garden Grove Unified School District's students did not speak English. Nearly 60 percent were from low-income families. Nevertheless, all but two of the district's 67 schools met or exceeded their Adequate Yearly Progress goals under the law.

We use No Child Left Behind *to set the targets we want to hit. We align all our actions and resources to hit those targets. And we believe the kids can do it.*
—Laura Schwalm, superintendent, Garden Grove Unified School District

The *No Child Left Behind Act* was designed to improve achievement. But it has also shown us what is achievable. Educators, administrators and public officials are working together, united behind a worthy goal. Now it's time to apply the act's successful principles to our nation's high schools.

There is not a moment to waste. Governors and business leaders are united in calling for urgent reform. Every year approximately one million students drop out of high school, costing the nation more than $260 billion dollars in lost wages, taxes and productivity over the students' lifetimes. A high school graduate can expect to earn about $275,000 more over the course of his or her lifetime than a student who doesn't finish high school; a college graduate with a bachelor's degree can expect to earn about $1 million more. Dropouts are also three-and-a-half times more likely to be arrested, according to reports. Encouraging at-risk students to stay in school by addressing their academic needs will improve their quality of life and that of their fellow Americans.

Every kid can graduate ready for college. Every kid should have the chance. Let's redesign our schools to make it happen.
—Bill Gates, chairman, Microsoft Corporation

The Answer:
The High School Reform Initiative
$1.475 Billion in FY 2007

Giving Americans the math and science skills they need will help us remain a world economic leader. Teaching students under the highest standards and offering more rigorous coursework will help us remain an education leader.

The president's **High School Reform Initiative** would hold high schools accountable for providing high-quality education to all students. And it would help educators implement strategies to meet the needs of at-risk high school students. The proposed program would make formula grants to states to support:

- The development, implementation and evaluation of targeted interventions designed to improve the academic performance of students most at risk of failing to meet state academic standards; and

- Expanded high school assessments that would assist educators in increasing accountability and meeting the needs of at-risk students.

High schools are failing to prepare too many of our students for work and higher education.
—Achieve, Inc. and National Governors Association, *An Action Agenda for Impoving America's High Schools*, 2005

Interventions would be designed to increase the achievement of high school students; eliminate achievement gaps between students from different ethnic and racial groups and income levels; and help ensure that students graduate with the education, skills and knowledge necessary to succeed in postsecondary education and in the technology-based global economy.

A key strategy would be the development of individual performance plans for students entering high school, using eighth-grade assessment data in consultation with parents, teachers and counselors. Specific interventions may include programs that combine rigorous academic course work with vocational and technical training, research-based

dropout prevention activities, and the use of technology-based assessment systems to closely monitor student progress. In addition, programs that identify at-risk middle school students for assistance would help prepare them to succeed in high school and enter postsecondary education. This includes college preparation and awareness activities for students from low-income families.

The president's proposal also would require states to develop and implement reading and mathematics assessments in two additional grade levels in high school, building on the current *NCLB* requirement for testing once in grades 10–12. The new assessments would inform strategies to strengthen school accountability and meet the needs of at-risk students.

Additional Support

Striving Readers ($100 million in FY 2007): First funded in 2005, this program would be expanded significantly to reach more secondary students reading below grade level, which puts them at risk of dropping out. Students would benefit from research-based interventions coupled with rigorous evaluations. Schools also would benefit from activities and programs designed to improve the overall quality of literacy instruction across the entire curriculum.

The Challenge:
Promoting Freedom and Understanding

America faces a severe shortage of people who speak languages that are crucial to its national security and global competitiveness:

- According to the Center for Applied Linguistics, less than one-fourth of public elementary schools report teaching foreign languages, even though a child's early years are the best years in which to learn a new language.
- Less than 1 percent of American high school students study Arabic, Chinese, Farsi, Japanese, Korean, Russian or Urdu—combined.
- Less than 8 percent of undergraduates in American universities take foreign language courses, and less than 2 percent study abroad in any given year.

To prepare young Americans to understand the peoples who will help to define the 21st century, nothing is more important than our ability to converse in their native tongues.
— U.S. Secretary of State Condoleezza Rice

While only 44 percent of U.S. high school students were studying a foreign language in 2002, learning a second or even a third foreign language is compulsory for students in the European Union, China, Thailand and elsewhere.

More than 200 million children in China study English. By comparison, only about 24,000 elementary and secondary school children in the U.S. study Chinese. Many students in other nations begin learning another language before they are even 10 years old. They will have an edge over monolingual Americans and others in developing new relationships and business connections in countries other than their own.

The Answer:
National Security Language Initiative
$57 Million in FY 2007

Critical-need foreign language skills are necessary to advance the twin goals of national security and global competitiveness. Together with the Department of State, Department of Defense and the Office of the Director of National Intelligence, the Department of Education will propose to offer grants and training for teachers under President Bush's National Security Language Initiative.

The initiative will increase the number of Americans who speak and teach foreign languages, with an emphasis on critical-need languages. It will strengthen and refocus the federal Foreign Language Assistance Program, and will initially enable 24 school districts across the country to create partnerships with colleges and universities to develop critical-need language programs. Among the critical-need languages identified are Arabic, Chinese, Korean, Japanese, and Russian, as well as languages in the Indic, Iranian and Turkic families.

The National Security Language Initiative will also provide funding to create a Language Teacher Corps, with the goal of having 1,000 new foreign language teachers in U.S. schools by the end of the decade. And it will enable the creation of the e-Learning Language Clearinghouse and expanded Teacher-to-Teacher seminars to assist foreign language teachers anytime, anywhere.

Conclusion

Thanks to our schools, the 20th century was known as the "American Century." The 21st century remains to be claimed. But Americans have never backed down from a challenge. This changing world offers another opportunity for Americans to shine, and the President's American Competitiveness Initiative and the rest of his 2006 education agenda will help set the course.

In the 21st century, economic power will be derived from skills and innovation. Nations that don't invest in skills will weaken; it is that straightforward.
—Louis Gerstner Jr., former chairman and CEO, IBM

America's schools and students have made great progress in improving academic achievement in the early grades. But like athletes or musicians, children of all ages must work hard each and every day if they wish to compete, perform and succeed—and their schools must show them the way. The president's 2006 education agenda will help prepare the students of today to become the successful leaders—the pioneers, discoverers and Nobel Prize winners—of the next American Century.

PRESIDENT'S AMERICAN COMPETITIVENESS INITIATIVE: EDUCATION
FY 2007 Budget Request

Math Panel	$ 10 million
Math Now for Elementary Students	$125 million
Math Now for Middle School Students	$125 million
AP-IB	$122 million *
Adjunct Teacher Corps	$ 25 million
Evaluation of Federal STEM programs	$ 5 million

* includes $32 million for AP-IB from FY 2006

Endnotes

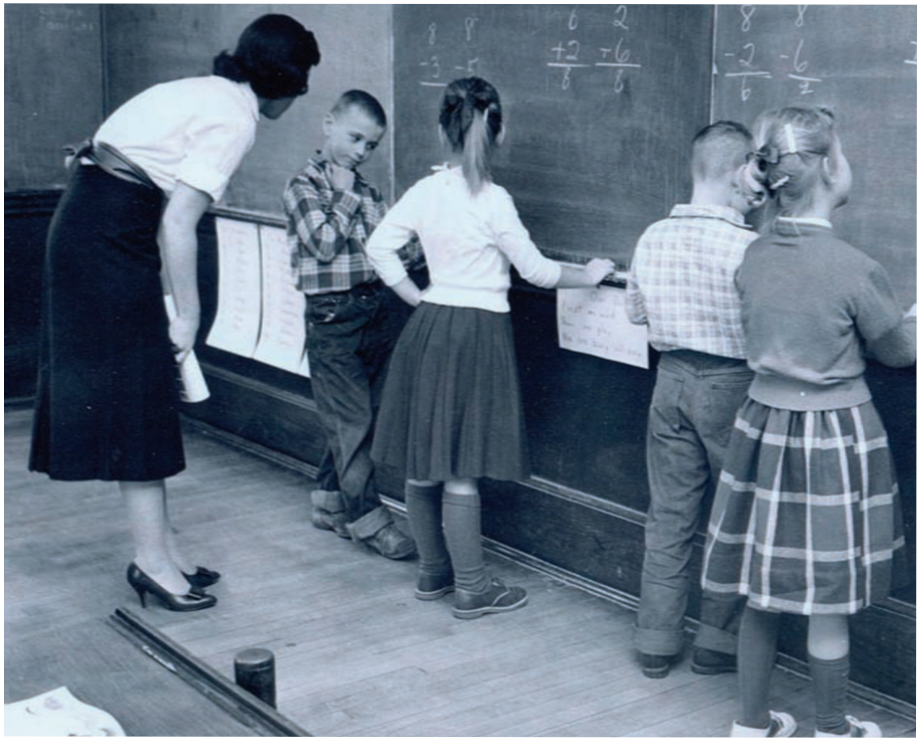
Page 4: The estimate of America's share of the world's science and engineering doctorates is from "Does Globalization of the Scientific/Engineering Workforce Threaten U.S. Economic Leadership?", by Richard B. Freeman, in *Working Paper Series,* National Bureau of Economic Research: Working Paper 11457, June 2005, page 5.

Page 5: The estimate of the percentage of the fastest-growing jobs that will require postsecondary education is from remarks by U.S. Secretary of Labor Elaine L. Chao, on Feb. 22, 2006, at the WIRED Initiative Town Hall Event in Washington, D.C.

The estimates of graduation rates for all, black and Hispanic ninth-graders are from "Public High School Graduation and College-Readiness Rates: 1991-2002," by Jay P. Greene and Marcus A. Winters, Manhattan Institute for Policy Research, New York: Education Working Paper No. 8, February 2005.

Page 12: The survey by the Raytheon Company regarding middle-schoolers' attitudes toward math is from www.raytheon.com/about/contributions/mathmovesu (accessed April 4, 2006).

The Business Roundtable study, *Innovation and U.S. Competitiveness: Addressing the Talent Gap*, 2005, is at www.businessroundtable.org/pdf/20060112Two-pager.pdf (accessed April 4, 2006).



No Child
LEFT BEHIND SM

Our mission is to ensure equal access to education and to promote educational excellence throughout the nation.

www.ed.gov