

# K-12 SCIENCE EDUCATION IN WASHINGTON STATE:

WHERE WE ARE AND WHERE WE NEED TO BE

**In Washington state, while our K-12 students are making strides in reading and writing, attention to science education has lagged. The number of science credits required to graduate from high school has not changed in 20 years, despite massive shifts in our region toward a knowledge-based, high-tech economy.**

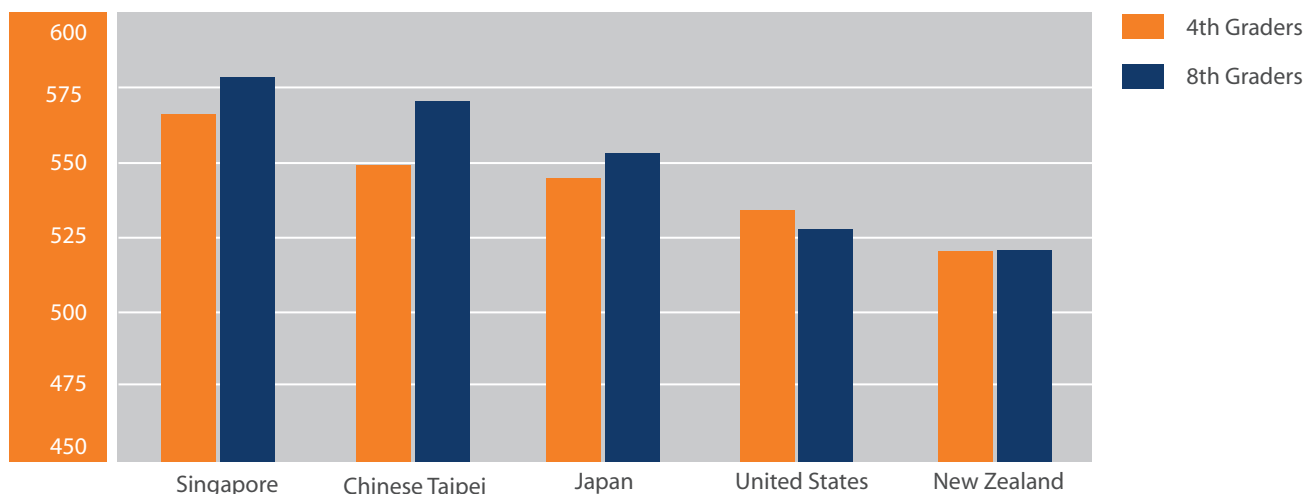
Our state is home to world-class companies that develop cancer therapies, create clean energy, and design airplanes and software. In addition to scientists and engineers, these employers need lab techs, consultants and technical writers who are science-literate. Today, Washington employers are importing employees from other states because our graduates don't have the requisite skills. Stronger science requirements will help our students achieve and give them a chance to compete in the regional and global economy.

While many of the highest-demand jobs are in science-related fields, science is not just for the Einsteins among us.

Science introduces critical thinking and problem-solving skills needed to make decisions about issues that affect us every day—from making decisions about finances or health care to understanding the news we read or how our consumer choices affect the world around us.

Students who lack science mastery by high school are less likely to choose science-related majors in college, or to seek technology-related jobs. We need to spark student interest in science starting in the elementary grades, with a hands-on, relevant curriculum and teachers who convey the excitement of science exploration and discovery.

## OUR CHILDREN NEED HIGH-QUALITY SCIENCE EDUCATION TO COMPETE IN THE GLOBAL ECONOMY



**Average TIMSS Science Scores by Country** (Source: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 2003. <http://nces.ed.gov/pubs2005/timss03/science1.asp>)

## THE FACTS

- Washington's high school students must graduate with two credits of science but only one needs to be a lab science. The entrance requirement of Washington's public four-year colleges and universities is two credits of lab sciences.
- In 2005, 44% of college students and 51% of high school graduates entering the workforce cited a gap in their science preparation for college courses or work.
- Washington's high school science requirements are below the national average.
- Nationwide, 49% of high school biology and 60% of high school life science and physical sciences classes are taught by teachers who lack a major or minor in the subject. That number increases for middle school where 93% of physical sciences teachers lack a major or minor in the subject.

## WHAT NEEDS TO BE DONE

- Increase the Washington high school graduation requirement from two years of science to three.
- Select inquiry-based curricula and approaches that engage students at all levels, while maintaining rigor.
- Build on standards-based science education in our state, such as the Washington Leadership and Assistance for Science Education Reform (LASER) partnership.
- Improve teacher credentialing in science, and reduce out-of-field placements.
- Attract more math and science teachers through expanded scholarship and loan repayment programs. Expand programs to prepare non-teaching professionals, such as engineers or scientists, to be licensed to teach science.

## THE REPORTS

### **Tapping America's Potential: The Education for Innovation Initiative**

[http://www.tap2015.org/about/TAP\\_report2.pdf](http://www.tap2015.org/about/TAP_report2.pdf)

### **Rising to the Challenge: Are High School Graduates Prepared for College and Work?**

<http://www.achieve.org/files/pollreport.pdf>

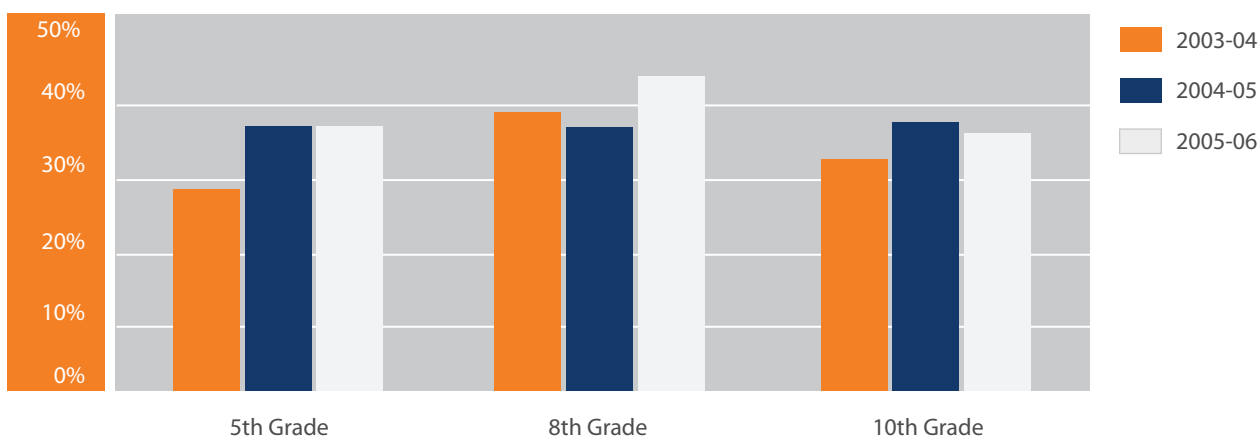
### **2007 Citizens' Report Card on Washington State Education**

[http://www.levfoundation.org/LEV\\_ReportCard2007.pdf](http://www.levfoundation.org/LEV_ReportCard2007.pdf)

### **Washington Learns: World-Class, Learner Focused, Seamless Education**

<http://www.washingtonlearns.wa.gov/FinalReport.pdf>

## FEWER THAN HALF OF STUDENTS PASSED THE SCIENCE WASL



**Percentage of Students Who Passed the Science WASL, 2005-06** (Source: OSPI)

## ADDITIONAL RESOURCES

Washington State LASER: [www.wastatelaser.org](http://www.wastatelaser.org), Science NetLinks: [www.sciencenetlinks.com](http://www.sciencenetlinks.com), Science Notebooks: [www.sciencenotebooks.org](http://www.sciencenotebooks.org), Try Science: [www.tryscience.org](http://www.tryscience.org), National Center for Public Policy and Higher Education: [www.highereducation.org](http://www.highereducation.org)