WASHINGTON STEM
REIMAGINING SCIENCE, TECHNOLOGY, ENGINEERING + MATH EDUCATION

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FACT SHEET:

The following science, technology, engineering, and math (STEM) facts tell the story of STEM today and tomorrow—nationally and in Washington state. Together, they illustrate the growing need and opportunity to power student success in STEM.

NATIONAL

- In the past 10 years, growth in STEM jobs has been three times greater than non-STEM jobs.[i]
- In the next decade, almost all of the 30 fastest-growing jobs will require some STEM skills,[ii] yet 61 percent of middle school students would rather take out the garbage than do their math homework.[iii]
- STEM jobs are expected to keep up an accelerated pace in the coming years leading to 1.8 million STEM-related job openings in 2018.[iv]
- If the United States is to maintain its leadership in STEM, we must produce approximately one million more STEM professionals over the next decade than is currently projected.[v]
- If the United States boosted its math performance by 40 points on the OECD Programme for International Student Assessment (PISA), roughly reaching the level of Canada, we could add on average between 7 and 11 percent annually to the national gross domestic product over the next 80 years, pumping an additional $75 trillion into the U.S. economy.[vi]
- Fewer than 40 percent of students who enter college intending to major in a STEM field complete college with a STEM degree.[vii]
- In a 2009 international exam given to 15 year olds, U.S. high school students ranked significantly behind 12 industrialized nations in science and 17 nations in math. Students in only four industrialized nations scored lower in math.[viii]
- In 2011, only 45 percent of U.S. high school graduates were ready for college work in math; 30 percent were ready in science.[ix]

WASHINGTON

- Washington state is a national leader in STEM: we rank first in the concentration of STEM jobs,[x] first in the creation of software companies,[xi] and second in the "New Economy" index for innovation and entrepreneurship.[xii]
- A 2011 Georgetown University study found that our state's STEM economy will only grow stronger. By 2018, we will see a 24 percent increase in STEM jobs, which is 7 points above the national average. 94 percent of these jobs will require some post-secondary education.[xiii]

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- There are currently 25,000 unfilled jobs in Washington due to a lack of qualified candidates (2013). Eighty percent of those jobs are in high-demand health care and STEM fields, such as computer science and engineering.[xiv]
- In the next four years, 45,000 jobs in Washington will go unfilled due to lack of qualified candidates.[xv]
- Filling the job skills gap would have big impact on our state economy, generating an additional 110,000 jobs, in addition to $720 million in annual state tax revenues and $80 million in local tax revenues by 2017.[xvi]
- While Washington ranks fourth in the country in technology-based corporations, we fall to 46th when it comes to participation in science and engineering graduate programs.[xvii]
- Nearly one-quarter of the projected job openings statewide through 2012 that require a bachelor's degree will be in the STEM fields of computer science, engineering, and life sciences.[xviii]
- The mismatch in Washington between the skills required for available jobs and individuals with those skills is growing faster than any other state except Delaware.[xix]
- The growing skill-opportunity mismatch has roots in our education system where half of 4th grade teachers in Washington teach less than 2 hours of science per week. Only four states in the country reported less science instruction.[xx]
- Only 45 percent of Washington's fourth-graders and 40 percent of eighth-graders scored proficient or above in math on the 2011 National Assessment of Educational Progress. Just 35 percent in both grades scored that well in science in 2009.[xxi]
- Washington's achievement gaps in math and science have not improved in over a decade and are the 12th largest in the nation.[xxii] If we continue to address the achievement gap at the current glacial rate, it would take 150 years for our African American students to realize the same levels of academic achievement as their peers.[xxiii]
- Less than half of our high school students have completed the necessary credits to apply to a Washington state four-year college. Lack of math courses is the biggest barrier to college for most students: only 21 percent of students had the needed math credits compared to 64 percent in English.
- Too many students in Washington are unprepared for college-level work. 51% of new, first-time college students entering Washington community colleges in 2009-2010 enrolled in remedial - meaning non-credit bearing - math classes.[xxiv] In addition to student tuition, the state expenditure for remedial math was estimated to cost the state over $47 million.[xxv]

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- Washington ranks 46th in the nation in terms of the likelihood of a student being enrolled in college by age 19.[xxvi]

- Washington state universities are not producing enough teachers to meet the growing demand in the coming years, leading to a shortage of nearly 1,000 STEM teachers.[xxvii]

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