

Transforming Science Education

People who understand science and technology

are smarter, more competitive, more productive, and more engaged global citizens who:

Make informed decisions about health and safety

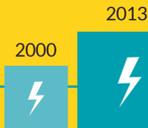
Are better able to participate in public policy decisions and debates

Manage daily lives that increasingly rely on technology

Find solutions for challenges that face our global population

...are prosperous!

These challenges include...



134%
The percentage by which China's energy consumption grew over the last decade



870M
The number of people around the world who do not have enough to eat



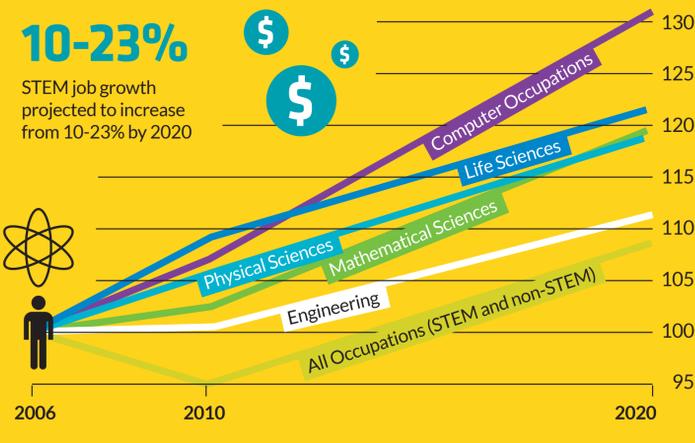
780M
The number of people who currently lack access to clean water



2000-2010
The warmest decade on record. How do we thrive during times of global climate change?

Jobs in scientific and technological fields pay well and are on the rise:

10-23%
STEM job growth projected to increase from 10-23% by 2020

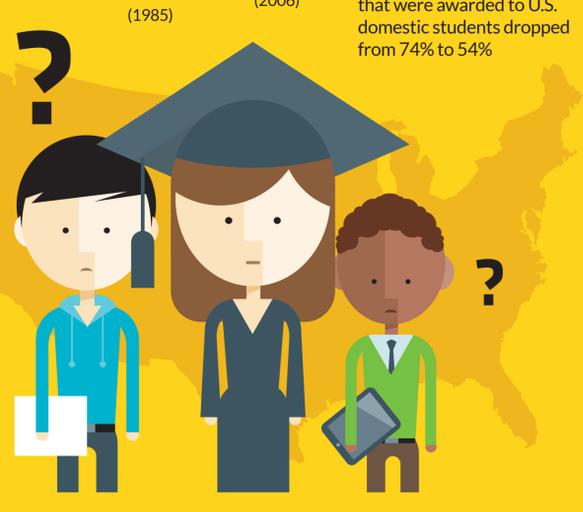


Average salaries



12-30%
STEM occupations out-earn non-STEM fields by 12-30% across all education levels

Are U.S. students prepared to meet the challenges of a technology-based global economy?



10% Fewer than 10% of Harvard graduates could explain why it gets colder in the winter



20% Nearly 20% of students can't draw conclusions based on simple investigations



50% One university found that 50% of their undergraduates could not identify the difference between an atom and a molecule



78% of high school graduates do not meet benchmark readiness for one or more college courses in mathematics, science, reading or English

U.S. students rank 17th in science and 23rd in math

16 countries outperform U.S. students in science

China	Australia
Korea	Estonia
Finland	Switzerland
Hong Kong	Lichtenstein
Singapore	Germany
Canada	Taipei
New Zealand	UK
Japan	Slovenia

22 countries outperform U.S. students in mathematics

China	Australia	Germany
Korea	Netherlands	France
Finland	Belgium	Taiwan
Hong Kong	Norway	Slovenia
Singapore	Estonia	Slovak Rep.
Canada	Switzerland	UK
New Zealand	Iceland	
Japan	Lichtenstein	

How can we better prepare students to meet the science and technology challenges of the future?

The Smithsonian Science Education Center works with districts and regions to build leadership teams that transform science education.

Let's start by transforming K-12 science education

Create a Plan

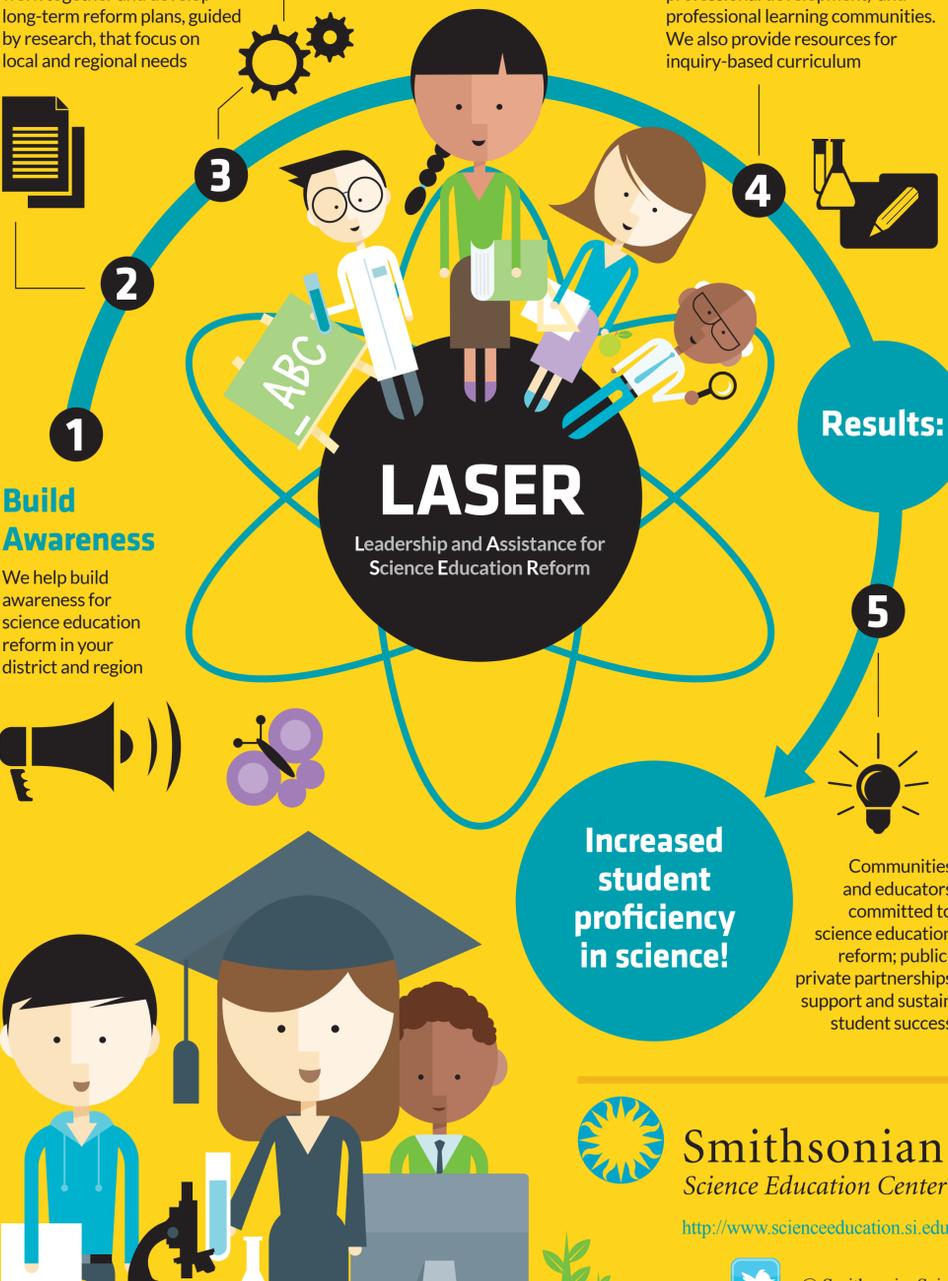
School, district, and community leadership teams get time to work together and develop long-term reform plans, guided by research, that focus on local and regional needs

Implement

We work together on an ongoing implementation and evaluation of that plan

Professional Development and Curriculum

We offer ongoing, content-focused professional development, and professional learning communities. We also provide resources for inquiry-based curriculum



Smithsonian Science Education Center

<http://www.scienceeducation.si.edu>

@SmithsonianSci

SOURCES: <http://www.usfunds.com/slideshows/facts-about-global-energy/#>; <https://www.wfp.org/hunger/stats>; <http://water.org>; <http://www.bls.gov>; <http://www.data360.org>; Organisation for Economic Co-Operation and Development. Presentation of 2010 PISA results; Carnevale, Anthony P., Michelle Melton, and Nicole Smith. (2011). "STEM": Georgetown University Center on Education and the Workforce; Fleischman et al. (2010). Highlights From PISA 2009; Hazen, Robert and James Trel, (1990). Science Matters: Achieving Scientific Literacy; Hazen, Robert. (1992). "Scientific literacy: The enemy is us"; U.S.Congress Joint Economic Committee. (2012). Stem Education: Preparing for the Jobs of The Future.