



Special Edition - COI Resources for Science, Technology, Engineering, and Mathematics (STEM)

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Graduating from high school college and career ready means having a solid grounding in the science, technology, engineering, and mathematics (STEM) fields. The Obama administration's Blueprint for Reform of the Elementary and Secondary Education Act provides \$300 million specifically for competitive STEM grants to support teachers and schools to improve STEM education, align it with college and career ready standards (including common core state standards), and identify effective instructional materials that improve teachers' knowledge and skills in effective STEM instruction for all students.

The Center on Instruction offers resources on science and math instruction that help educators improve academic outcomes so that all students, including English learners and students with disabilities, graduate from high school college and career ready. We also provide information on STEM topics that will support the increase in the number of students interested in pursuing STEM fields in their academic studies. Some of the STEM, science, and math resources are highlighted below; additional research-based and reviewed resources are available **free** for download at <http://centeroninstruction.org>.

STEM Resources

STEM Overview - Nevada STEM Stakeholders Committee Statewide Meetings. The Center on Instruction's STEM staff met with the Nevada STEM Stakeholders Committee at two statewide meetings led by the Nevada Department of Education and the Southwest Regional Comprehensive Center to set the stage for productive discussions by providing information about National STEM efforts and resources. [Read more...](#)

Rising Above the Gathering Storming, Revisited: Rapidly Approaching Category 5. This report, an update of the work of the government and the private sector in K-12 science and technology education, analyzes how the original recommendations to the competitiveness challenge have or have not been acted upon, what consequences this may have on future competitiveness, and priorities for the future. [Read more...](#)

Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America's Future. This President's Council of Advisors on Science and Technology (PCAST) report provides a two-pronged strategy for improving K-12 STEM education: prepare and inspire the next generation of students. [Read more...](#)

Preparing the Next Generation of STEM Innovators: Identifying and Developing Our Nation's Human Capital. This report from the National Science Board explores ways to foster the development of the next generation of leading STEM professionals, entrepreneurs, and inventors. [Read more...](#)

Successful STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics. This report from the National Research Council outlines criteria for identifying successful STEM schools and programs for the purpose of informing schools, districts, state and national policymakers about decisions made to improve K-12 STEM education. [Read more...](#)

Science Resources

Webinar: Exploring the National Research Council's New "Framework for K-12 Science Education". The Center on Instruction hosted a webinar in September 2011 to highlight this recently released document that will serve as the foundation for a new set of science standards. [Read more...](#)

Effective Science Instruction: What Does Research Tell Us? - Second Edition. This brief from the Center on Instruction distills the research on science learning to inform a common vision of science instruction and describes the extent to which science education reflects this vision. [Read more...](#)



Learning Science in Informal Environments: People, Places, and Pursuits. This report from the National Academies of Science examines the potential of non-school settings (walking in the park, watching a sunrise, visiting a science center, zoo, or aquarium as after-school activities or through a local organization's program) for science learning and provides the research base for applying sound educational principals to a variety of informal science education settings. [Read more...](#)

Math Resources

Webinar: Improving Instruction through the Use of Data: How to Use Your Data to Inform Mathematics Instruction. The Center on Instruction presented a webinar in October 2011 for Doing What Works' (DWW) School Turnaround Learning Community in which COI's Russell Gersten and Ben Clarke provided information and resources about the use of data to inform mathematics instruction that is particularly useful to federally funded School Improvement Grant (SIG) programs and technical assistance providers working with schools in need of improvement. [Read more...](#)



Mathematics Instruction for Students with Learning Disabilities or Difficulty Learning Mathematics: A Synthesis of the Intervention Research and A Guide for Teachers. These documents provide a meta-analysis of the research on instruction that enhances the mathematics performance of students in grades 1-12 with learning disabilities and a guide that identifies seven effective instructional practices for teaching these students. Read more on the [Synthesis](#) and on the [Teachers' Guide](#).

Webinar: The Common Core State Standards for Mathematics in Grades 9-12. The Center on Instruction hosted a webinar in June 2011 featuring Dr. Fred Dillon, who provided an overview of the Common Core State Standards in Mathematics in Grades 9-12, with a focus on the mathematical practices and five "strands". [Read more...](#)

Common Core State Standards for Mathematics - What, How, When and How about YOU! The Center on Instruction hosted a webinar in February 2011 featuring Dr. Francis (Skip) Fennell who provided an overview of the Common Core State Standards and the intended impact on the field of mathematics. [Read more...](#)

Please visit our website at <http://centeroninstruction.org> to find other relevant resources that can be downloaded FREE.

Follow us via [RSS feed now!](#) You can now access our COI resources by subscribing to our RSS feeds for each content area. To sign up for any or all of the RSS feeds or our email listserv, click [here](#). You can also subscribe by going to our website at <http://centeroninstruction.org> and clicking on the orange RSS Feed button in the gray bar at the top of the page.

The Center on Instruction is one of five content centers to support the regional comprehensive centers in providing technical assistance to SEAs and districts/schools in need of improvement. The goal of COI is to supply much of the research-based information, products, guidance, analyses, and knowledge on key topics related to the Elementary and Secondary Education Act (ESEA) to the 16 Regional Comprehensive Centers for their work with states and districts.

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